DOCUMENT RESUME

ED 225 582 IR 050 064

AUTHOR El-Hadidy, Bahaa
TITLE Training of Egyptian Information Specialists: A Multifaceted System Approach. Final Report.
INSTITUTION Catholic Univ. of America, Washington, D.C. Dept. of Library Science.
SPONS AGENCY National Science Foundation, Washington, D.C.
PUB DATE Jan 82
CONTRACT NSF-INT-7927016; USAID-PASA-NF/EGY-0016-7-77
NOTE 259p.
PUB TYPE Reports - Descriptive (141) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC11 Plus Postage.
DESCRIPTORS Charts; Foreign Countries; Foreign Students; *Information Scientists; Information Services; *International Programs; *Library Education; Postsecondary Education; *Professional Training; Program Development; Program Evaluation; Program Implementation; Questionnaires; Training Objectives
IDENTIFIERS *Egypt; *Individualized Training Programs; National Information Systems; Scientific and Technical Information

ABSTRACT

This report presents information on a 1980/81 U.S. non-degree training program which was designed to provide Egyptian scientific and technical information (STI) specialists with the basic minimum knowledge and skills required for developing national information services in Egypt. The background and purpose of the Egyptian STI program are discussed as well as the objectives, organization, and administration of the STI training program in the U.S.; the design of the training system; and the development and implementation of individualized training schedules for 15 Egyptian information specialists. Elements of training are noted as orientation, formal coursework, in-service training, field visits, tutorials, seminars, workshops, participation in professional meetings, and a final conceptual paper assignment. Details of the selection and characteristics of training participants, evaluations of the training system, and recommendations for further training based on the success of the initial program are also presented. The report includes an executive summary, 9 charts, and 35 references. Its appendices comprise a list of project staff and advisors, a compilation of course descriptions, a list of papers written by the trainees, sample evaluation questionnaires, a list of U.S. host training organizations, outlines of the 15 individual training programs, a list of books for the preparation of trainees in Egypt, and the curriculum vitae of the trainees. (Author/ESR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

ED225582

TRAINING OF EGYPTIAN INFORMATION SPECIALISTS:

A MULTIFACETED SYSTEM APPROACH

BAHAA EL-HADIDY
Project Director

FINAL REPORT

NSF Contract INT-7927016
USAID PASA NF/EGY-0016-7-77

January 1982

School of Library and Information Science
The Catholic University of America
Washington, D. C.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Bahaa El-hadidy

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR050064

Any opinions, findings, conclusions or recommendations expressed herein are those of the Contractor and do not necessarily reflect the views of the National Science Foundation, the Agency for International Development or the Egyptian Academy of Scientific Research and Technology.

ACKNOWLEDGEMENTS

Many persons and institutions have contributed to the success of this project. Professor Dr. Ibrahim Badran, President of the Egyptian Academy of Scientific Research and Technology, has been a guiding force and a source of inspiration and motivation to the project by his commitment to training as a critically important element in the development of the Egyptian national information system. We are indeed indebted to his continuous support and encouragement.

A special acknowledgement is well deserved by Professor Dr. Ahmed Gad, Director of the National Information and Documentation Center of Egypt, and a member of the Egyptian Steering Committee. Professor Gad's expert knowledge and insights as well as his support and advice were instrumental in fulfilling the project objectives.

Other members of the Egyptian Steering Committee are gratefully acknowledged for their invaluable support: Professor Dr. Ali El-Salmy, Professor of Business Administration, Cairo University; General A. M. Hallouda, Director of the General Agency for Public Mobilization and Statistics; Professor Ahmed Aziz Kamal, Dean of Faculty of Engineering, Cairo University; Dr. Mohamed Madkour, Director General of Al-Ahram Microfilming and Organization Center; and Dr. Mohamed Younis, National Research Center.

I would also like to thank Professor Dr. Saad El-Hagrassy, Professor of Library and Information Science, Cairo University, for his intellectual contribution and interest throughout the project.

Professor Dr. Elizabeth Stone, Dean of the School of Library and Information Science, and President, American Library Association, was the primary facilitator in coordinating the project components with The Catholic University of America and the library community at large.

I am deeply grateful to Mr. John Lorenz, Senior Advisor of the Project Steering Committee for his many contributions which contributed immeasurably to the success of the project. The creative guidance of the Steering Committee of the Project is also gratefully acknowledged.

The formative evaluation of the project, designed and implemented by Professor F. W. Lancaster, Graduate School of Library and Information Science, University of Illinois, has strengthened the project throughout and assured the quality of its final outcome.

Space limitations prevent thanking by name the many individuals and institutions in the United States who contributed their valuable time and expertise to provide the on-site training, advice, and assistance to the Egyptian participants in this project. On behalf of those who participated in the project, I would like to extend our thanks and gratitude to them all.

The project staff and participants are deeply indebted for the support and encouragement of the United States Agency for International Development (Cairo), so ably represented by Mr. James Riley and Ms. Janice Weber. We are also grateful for the support of the National Science Foundation as represented by the untiring efforts of Mr. Eugene Pronko, Contract Officer, whose interest and commitment substantially enhanced the project outcome.

Financial support for the work performed by the Catholic University under Contract INT-7927016 to the National Science Foundation (NSF) was provided by the United States Agency for International Development (AID) under Participating Agency Service Agreement (PASA) NF/EGY-0016-7-77 with NSF and in conjunction with Project Grant Agreement 263-0016 between AID and the Egyptian Academy of Scientific Research and Technology.

Finally, this work is dedicated to the Egyptian training participants who, through their spirited commitment, enthusiasm for learning, and eagerness to serve their country, deserve our highest admiration. We sincerely wish them all success in their noble mission.

The Catholic University of America
Washington, D. C.

BAHAA EL-HADIDY
Project Director

EXECUTIVE SUMMARY

The lack of sufficient trained personnel is one of the principal impediments to enhancing the development of information activities in Egypt. The improvement of the education and training of information professionals in Egypt is clearly the primary need for the development of the national information infrastructure. A national plan of education and training of information professionals should have two major goals. The first would be a short-range training program to develop, in the shortest possible time, a cadre of well-trained staff to meet the present serious shortage of trained specialists in the Egyptian information sector. The second is a long-range plan for a national program of education and training of professionals and paraprofessionals needed for the developing national system. This report discusses the design and development of a two-year, non-degree training system to train Egyptian information specialists in the United States.

Objectives and Scope of Training

The major objectives of the training system were to train a core group of information specialists in the technical skills required for the development of the national information services in Egypt. Initially, the program was to focus on providing the specialists needed to improve the level of services provided by the National Information and Documentation Center (NIDOC), the focal point of the national information infrastructure. Shortly after the training started, the training objectives were modified to address the needs of the national system being designed and developed. Accordingly, the scope of training was broadened from five to fourteen areas (tracks), and the number of trainees was increased from twelve to fifteen.

The project staff consisted of a Project Director, a technical assistant, an administrative assistant, an external evaluator, and a steering committee consisting of thirteen advisors.

Elements and Strategies of Training

Based on the analysis of the training requirements, an integrated, multifaceted training system was developed utilizing several training strategies: a) an orientation to introduce the trainees to the program; b) formal course work to provide the trainees with basic knowledge and technical skills; c) in-service training to relate theory to actual practice; d) field visits to provide first-hand observations of library and information center operations and processes; e) tutorials to provide individualized assistance; f) seminars and workshops on topics of trainees' specializations; g) participation in professional meetings to observe current trends; and h) a final conceptual paper assignment to relate trainees' experience to their future role in the national system. Fifteen individualized programs were developed for the trainees so that each training element fits within an overall matrix designed to provide the trainees with the necessary skills in the shortest time.

An evaluation of the training system was developed to insure that the context, sequence, strategy and other components of the system design were consistent with the performance objectives, and were appropriate for the trainees. The evaluation had both formative and summative elements. The formative evaluation, consisting of formal and informal aspects, was conducted by an external evaluator, to provide continuous feedback for the purpose of improving the training during its progress. The summative evaluation was conducted by the Project Director at the end of the program. This evaluation looked retrospectively at the program as a whole with the purpose of assessing its effectiveness, and suggesting improvements to similar programs in the future.

Implementation of the Training Programs

The planning and developing of the individualized training programs included several stages: identifying program goals; specifying objectives to meet goals; identifying trainee characteristics; identifying available education and training resources; developing a program plan; maintaining on-going evaluation; and compiling a final report. The development process was iterative so that feedback from any stage could modify the program as it was being developed. The training programs provided a broad opportunity for the trainees and included 32 courses

taken at four different universities, 42 training sites, 44 field visits, 15 workshops and seminars, and 14 professional meetings. For each of the training areas, there was a coordinator, who served also as an advisor for the trainee in that area.

The Training Participants

The fifteen trainees were scheduled to be trained in four groups. The first group completed its training in eight months, and the successive three groups completed the training in six months. The shortening of the training period was due mainly to the modification of the training program so that the course work would overlap with the on-site training. The trainees were selected from NIDOC, Cairo University, and other institutions affiliated with the national information project. An ad hoc committee chaired by the Project Director selected the trainees through personal interviews. The major qualifications required for the participation in the program were proficiency in the English language; relevant academic background and work experience; adaptability to foreign environments and commitment to the national information project. The major limitation affecting the selection of participants was the lack of a sufficiently large number qualified to participate in the training. Other major constraints included the requirement that trainees be selected only from institutions associated with developing the national system, and the reluctance of some candidates to leave their families for an extended period of time.

Evaluation of the Training System

The formative evaluation revealed that the entire program had exceeded the trainees' expectations, that the various elements in the program were shown to exhibit considerable synergy, and that the less formal elements in the program were as valuable as the formal elements. It was indicated that the trainees learned more than they expected to and were exposed to areas previously unfamiliar to them, expecially in automated procedures. The evaluation also recognized some problems during the first phase of the training and made it possible for the project staff to solve or mitigate most of them. As a result of the evaluative monitoring system, the program was improved continuously throughout its duration.

CCC 8

The summative evaluation, which included interviewing the trainees and their supervisors in Egypt, indicated that the participants in the program became better prepared to contribute to the development of the Egyptian national information system. The trainees were described by their supervisors as having significantly improved their professional capabilities and attitudes, had new perspectives, had more maturity, and were performing their work with creativity and confidence. Several trainees were given increased responsibilities after their return from their training, such as developing new activities and training other staff. Although some trainees were given responsibilities and assignments related to the developing national system after their return to Egypt, there were delays in assigning most of the trainees to specific roles in the developing system.

Conclusions and Recommendations

Problems and limitations affecting the training program were mainly sociological and psychological, such as language difficulties and cultural differences. Other problems resulted from the lack of pertinent professional backgrounds of the trainees, the heavy training workload required, and the lack of knowledge of the specific role that the trainees would eventually play in the developing national system.

In spite of these problems and limitations, it was concluded that: a) the training program was highly effective in preparing a cadre of well-trained information specialists who are competent in assuming various roles in the national information system being designed and developed; b) the training was successful in broadening and deepening the trainees' understanding of library and information work; and c) participation in the program significantly increased the trainees' self-perception and motivation.

It was also concluded that a basic minimum core knowledge of the theoretical aspects and basic principles of library and information science is essential for the successful preparation of personnel in any specialized area. The multifaceted program consisting of several elements of learning strategies was found most effective in providing the required skills needed by professionals.

Another major conclusion was that a continuing education program for the trainees will be essential to maintain their skills and maximize their contribution to the national information system.

Based on the success of the initial training program, and the experience and observations resulting from it, several recommendations were made: a) develop a continuous education program for the participants in the Phase I program; b) transfer the training achieved by the program to a wider audience than those who participated in the program; c) develop the indigenous resources of Egypt for the continuing education of professionals and paraprofessionals; d) extend United States-Egypt cooperation in manpower development to the formal degree program; and e) develop similar short-range programs of training in the future.

TABLE OF CONTENTS

	Page
Acknowledgements	i
Executive Summary	iii
Table of Contents	viii
List of Figures	xi
1. INTRODUCTION	1
1.1 Background and Purpose of the Egyptian STI Program	5
1.2 Objectives of Training	8
1.2.1 Initial Objectives	12
1.2.2 Revised Objectives	13
1.3 Project Organization and Administration.	15
1.3.1 The Contractor	15
1.3.2 Organization	16
1.3.3 Staff	16
1.3.4 The Steering Committee	18
2. THE TRAINING SYSTEM DESIGN	21
2.1 The Scope of Training	21
2.2 Elements and Strategies of Training	23
2.3 Evaluation of Training	29
3. DEVELOPMENT AND IMPLEMENTATION OF INDIVIDUALIZED TRAINING PROGRAMS	38
3.1 Concept of Training	38
3.1.1 Determination of Training Objectives	39
3.1.2 Selection of Courses	40
3.1.3 Selection of Sites for Training	41
3.1.4 Monitoring of Training	41
3.1.5 Evaluation of Training	42
3.1.6 Limitations and Constraints	42
3.2 Case Study	43
3.3 Implementation of Training Programs	49
3.4 Training Programs	51

4. THE TRAINING PARTICIPANTS..... 54

4.1 Schedule of Training..... 54
4.2 Selection of Trainees..... 56
4.3 Characteristics of Trainees..... 60
4.4 Limitations and Constraints..... 64

5. EVALUATION OF THE TRAINING SYSTEM..... 67

5.1 Formative Evaluation..... 67
5.1.1 First Group of Trainees..... 68
5.1.2 Problems Encountered in the Evaluation..... 75
5.1.3 The Later Groups..... 76
5.2 Summative Evaluation..... 81
5.2.1 Participants' Evaluation of the Program..... 82
5.2.2 Supervisors' Evaluation of the Program..... 89
5.2.3 Summary and Observations..... 94

6. CONCLUSIONS AND RECOMMENDATIONS..... 96

6.1 Problems and Limitations of the Training Project..... 97
6.1.1 Language Difficulties..... 97
6.1.2 Cultural Differences..... 99
6.1.3 Lack of Pertinent Professional Background..... 100
6.1.4 Academic Training and Workload... 101
6.1.5 Identification of Trainees' Roles in the National Information System..... 102
6.2 Conclusions..... 103
6.3 Recommendations..... 108
6.3.1 Continuous Education of the Trainees..... 108
6.3.2 Extending the Training to Other Personnel in the Library and Information Sector..... 109
6.3.3 Developing the Indigenous Resources for Egypt for the Continuing Education of Professionals and Paraprofessionals..... 110
6.3.4 Extending the Cooperation in Manpower Development to the Formal Degree Program..... 110
6.3.5 Developing Future Short-Range Training Programs..... 111

REFERENCES..... 113

APPENDICES..... 117

A. Project Staff and Advisors..... 117
B. Course Descriptions..... 123
C. Titles of Papers Written by Trainees.... 135
D. Formative Evaluation Forms..... 141
E. Host Organizations for Training..... 155
F. Individual Training Programs..... 163
G. List of Books for Preparation of Trainees in Egypt..... 195
H. Curriculum Vitae for Trainees..... 201

LIST OF FIGURES

		Page
1.	Egypt Applied Science and Technology Research Program.....	6
2.	Manpower and Development Plan.....	11
3.	Project Organization.....	17
4.	Student Program.....	44
5.	Training Program for H.....	52
6.	Schedule of Training.....	57
7.	Trainee Qualification.....	59
8.	Final Training Evaluation Interview..... (applied to former trainees in Egypt, November 1981)	83
9.	Final Training Evaluation Interview..... (applied to supervisors in Egypt, November 1981)	90

CHAPTER 1. INTRODUCTION

In the development of national scientific and technical information programs and services in developing countries, several major factors are involved. First, the need to build an effective infrastructure to develop and sustain such services and make such a program successful. Second, the desirability of building on the resources and strengths that already exist. Third, the necessity of developing an integrated educational and training program to provide a cadre of skilled personnel to plan, operate and manage the system of services. Fourth, the essentiality of planning public information and user education programs to develop the users of the national system.

Of these factors, education and training of professionals has been increasingly recognized as one of the most acute problems in enhancing the development of information activities in developing countries. Saracevic[1], in a survey article prepared for the 1979 United Nations Conference on Science and Technology for development, mentions the considerable increase within the last decade of the number of discussions of the needs for well-educated

(1) Saracevic, T. "Perception of the Needs for Scientific and Technical Information in Less Developed Countries." Journal of Documentation. 36(3): 214 - 267; 1980.

and trained informational professionals in developing countries. He goes on to caution about the dangers of getting involved in the new sophisticated information systems and technologies in the absence of skilled professionals.

In discussing education and training of professionals in developing countries, it should be mentioned that this involves much more than just the academic degree programs which are dominated by the theoretical aspects of the subjects. There is a great need for training in the practical aspects of professional work which offer operational experience and provide skilled professionals. In addition, opportunities should be provided for continuing education of personnel already doing professional work to update their knowledge in the light of rapid changes in information technologies.

The problem of education and training for information professionals in developing countries is very much affected by the conditions of information manpower in these countries. These have been characterized by the already mentioned lack of available trained personnel; the low prestige of information professionals; the lack of continuing education; the inexperience in working in teams[2].

(2) Eres, B. K. "Transfer of Information Technology to Less Developed Countries: A Systems Approach." Journal of the American Society for Information Science. 32(2): 97 - 102; 1981 (P. 99; table 1).

In addition, there are a number of obstacles which hamper the local education and training of these professionals. Among these obstacles are: inadequacy of educational and training facilities, resources and opportunities; lack of qualified faculty; low level of integration between the educational programs and the existing national needs; sporadic nature of the training efforts; and lack of career development opportunities[3].

Instead of relying solely on local institutions and indigenous personnel, Wasserman[4] mentions two options to the education and training of information professionals in developing countries. First, sending personnel to full-scale formal degree programs in developed countries. Second, relying on the faculty and educational consultants from overseas to build the potential of education and training in the home country. However, he indicates that both alternatives have major inherent problems. The first is subject to the "brain drain" of professionals who remain in the host country, and the second tends to rely continuously on the outside support, failing to build the desirable local strength. Wasserman suggests alternative

(3) Saracevic, T. Op. cit.

(4) Wasserman, P. "International Educational Patterns in Information Science: Characteristics and Issues." American Society for Information Science Annual Meeting Proceedings. 12: 69 - 70; 1975.

short-term "special 'crash' programs for the rapid acculturation of individuals, particularly those drawn from other disciplines to assume responsibilities in information organizations". He points out that such programs offer better opportunities and broader exposure than is provided in the home country.

This report discusses the design and development of a short-term special program developed to train Egyptian information specialists in the United States. In 1978, the National Science Foundation (NSF) issued a Request for Proposals for development and management of a short-term, non-degree training program to strengthen the skills of Egyptian scientific and technical information specialists.

The National Science Foundation was acting in its role as manager for two program components under a Participating Agency Service Agreement with the United States Agency for International Development (AID). AID initiated the project management contract to support its "Project Grant Agreement Between the Arab Republic of Egypt and the U.S.A. for Applied Science and Technology Research", an agreement between AID and the Egyptian Academy of Scientific Research and Technology (ASRT). NSF is responsible for two of six components: (1) provision of scientific equipment and (2) scientific and technical information.

The National Academy of Sciences has management responsibility for the other four components (Figure 1).

RFP 79 - 107 was issued by NSF as part of the scientific and technical information (STI) program. The School of Library and Information Science of the Catholic University of America was selected as the successful contractor to undertake this project. This is the final report for the two-year project; December 1979 to January 1982.

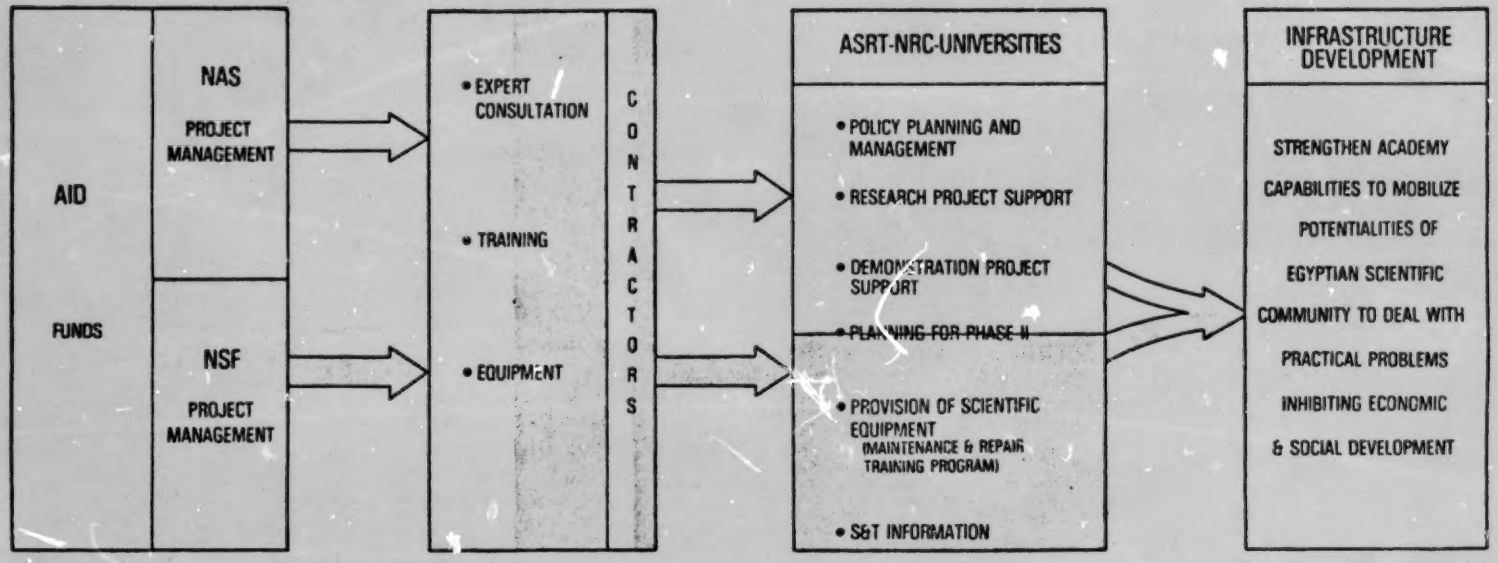
1.1 Background and Purpose of the Egyptian STI Program

As mentioned above, the scientific and technical information program is part of the larger Applied Science and Technology Research Program. This Program was organized in 1975 to redirect the basically academic orientation of Egypt's scientific and technical research and development efforts toward applied goals and solutions to problems to contribute to the country's socio-economic development.

Although Egypt has been one of the first, among developing countries, to recognize the importance of the role of scientific and technical information in socio-economic development, the development of the Egyptian information sector has been taking the form of sporadic and non-coordinated efforts. In 1954, the National

FIGURE 1

EGYPT APPLIED SCIENCE AND TECHNOLOGY RESEARCH PROGRAM



FUNCTIONAL RELATIONS OF MAJOR PARTICIPANTS

(Source: NSF RFP 79-106/7)

Research Center, still in its early stages of development, established a department which operated nationally and internationally. This was later developed in 1968 into the National Information and Documentation Center (NIDOC), an organ of the Egyptian Academy of Scientific Research and Technology, the policy-making organization for the country's science and technology. The development of NIDOC and the information sector in Egypt has been hampered by the region's political fluctuations and harsh economic conditions. There has been a tremendous lack in the human and material resources necessary for the development of the national information infrastructure system. The result has been serious deficiencies in scientific and technical information activities.

The situation changed in the 1970's when scientific and technical information was given priority under the United States-Egyptian Agreement on Cooperation in Technology, Research and Development. In 1976, a panel of United States and Egyptian specialists who studied the state of scientific and technical information (STI) services in Egypt reached the conclusions that (a) there exists an urgency to develop a national program for STI in Egypt as a key component of the country's socio-economic evolution, and (b) there exists a need for expert assistance to Egypt to further her development of STI resources, services and manpower.

Consequently, an Egyptian STI program was developed by a United States-Egyptian Program Committee which became the basis of the STI component of the United States AID-Egyptian ASRT Project on "Applied Science and Technology Research", mentioned above. The purpose of the STI program is to upgrade the scientific and technical information services to meet the information needs of the Egyptian scientific and technical community. The first phase of the STI program, a two-year period, includes (a) development of a proposed design for a nationwide system of services, (b) a pilot experiment in selective dissemination of information to provide access to United States computerized scientific and engineering data bases, (c) the provision of needed current S&T literature together with associated equipment for its distribution and use, and (d) a non-degree training program of key information personnel. which is the subject of this report.

1.2 Objectives of Training

In considering the state of development of S&T information services in Egypt, one can conclude that a key factor in the deficiency of the present system has been the lack of trained personnel and the inadequacy of appropriate expertise. In addition, there has been a serious lack of essential knowledge and skills among the professionals which prevents them from giving satisfactory

job performance and interferes with their potential for assuming greater participation in the development of the national information system. It should be also mentioned that the only institution in the country that provides academic degree programs, namely the Department of Librarianship and Archives at Cairo University, has been hindered in its progress by the lack of resources, materials, and teaching staff. Being one of the departments of the Faculty of Arts, its programs and studies are geared toward humanities and traditional librarianship, with very few courses in information science, and no provision for students with background in the hard sciences.

During the past decade, there have been a number of special studies and recommendations by United Nations agencies and international experts aimed at enhancing the national system. Nevertheless, most of these studies and recommendations were not implemented. There have been also sporadic training activities including short courses, workshops, seminars, and visits to different information facilities in developed countries. These activities were fragmented and involved too many local and international agencies without consideration of each other's efforts or of the actual national needs.

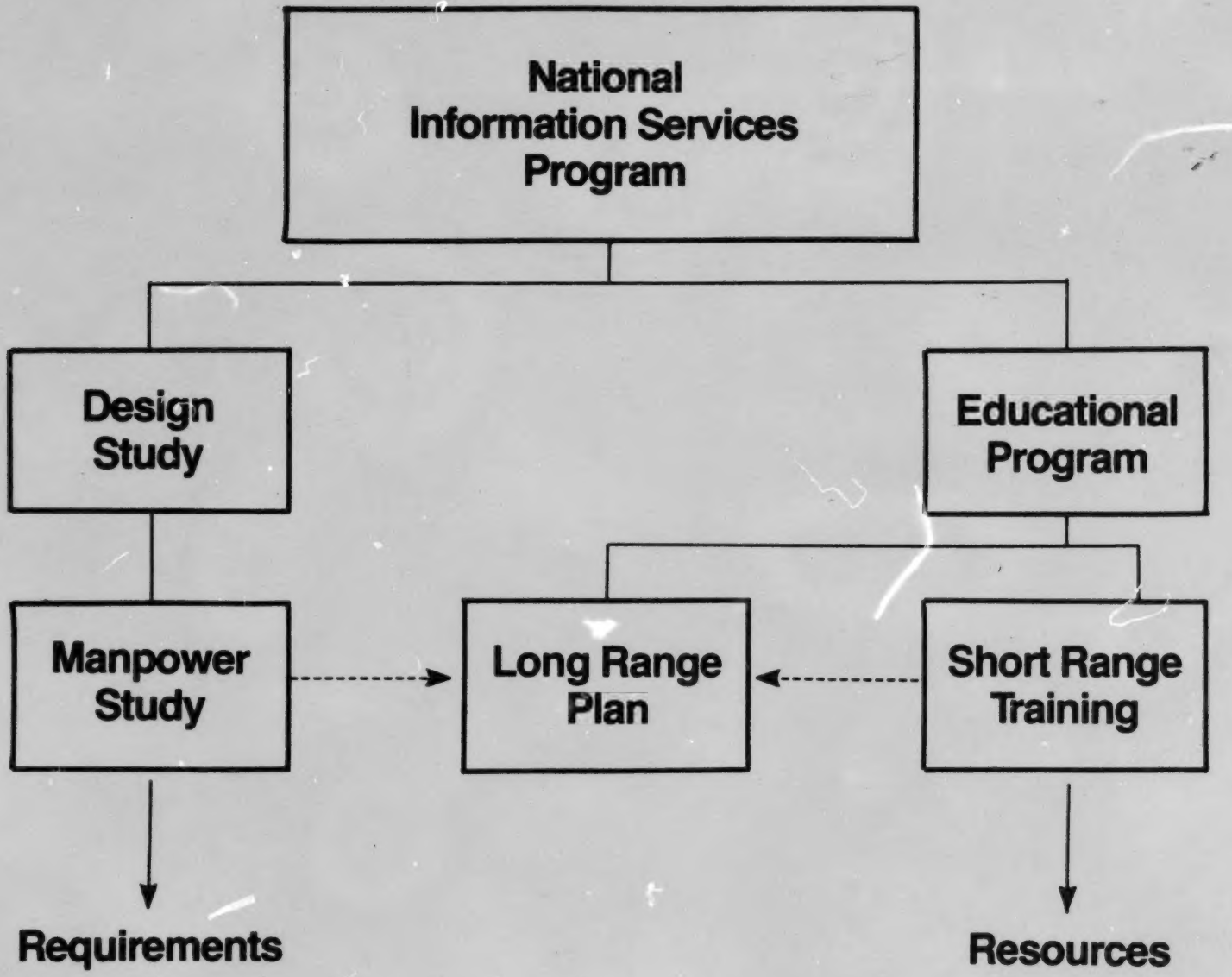
With the development of the STI program under the United States-Egypt Project on Applied Science and Technology

Research, a national integrated plan of education and training of information personnel was considered as a major element of the program. The manpower development plan is viewed as having two major goals (Figure 2). The first is a short-range training program to build, in the swiftest time, a reasonably trained staff to meet the present serious problem of lack of trained specialists in the Egyptian information sector. The second is a long-range plan for an on-going program of education and training of professionals, paraprofessionals, and support staff required to design, operate, and manage the national system. The development of such a plan would be based on the study and analysis of manpower requirements for information activities in Egypt, and the analysis of information-related training activities in the country. These requirements would result from the design study surveys, and activities of phase one of planning the national system.

With the lead-time required to prepare professionals for some activities, which amounts frequently to several years, the short-range program is aimed at satisfying the critical immediate needs of staffing and upgrading the national information services being developed. It is also designed to support the development of a systematic and continuing educational and training program at the national level. Experience gained from organizing training activities

FIGURE 2

Manpower and Development Plan



in developing countries indicates that short training programs cannot function in lieu of an efficient national educational system. These programs can, however, "help in the contribution of such systems and the promotion of measures to improve it (the national system)"[5].

1.2.1 Initial Objectives

The Egyptian STI Training Project was established as a short-range program with the following objectives:

1. To prepare, as rapidly as possible, a cadre of trained information specialists who can provide better information services to the scientific community in Egypt, especially at the critical phase of designing and implementing the national socio-economic plan.
2. To provide specialists who are able to meet the urgent need of improving the present information services at NIDOC and its units (the Library, Bibliographic Services, Publications, and Reprography) and, to the extent possible, other information institutions in Egypt.

---

(5) Von Ledebur, Freiherr Ernst-J. "Experience in Organizing In-The-Field Educational Programmes and Training Courses in Industrial and Developing Countries." In: Current Issues and Trends in Education and Training for Information Work in Developing and Developed Countries. The Hague: FID; 1981 (FID Publication 595), pp. 85-94.

3. To provide a nucleus of trained information specialists who can develop on-the-job training for other personnel at NIDOC and other information institutions in Egypt.

4. To provide trained specialists who can participate in the tasks and activities of designing and developing the Egyptian national information system.

These emphases followed the recommendations and plans of the Applied Science and Technology Research Program and the Scientific and Technical Information Program Committee. With the overall goal to advance Egypt's national socio-economic development by directing the efforts of the science and technology community toward solving national problems, it was concluded that development of STI services and manpower at the level of the national program would achieve the greatest benefit. Therefore, these objectives centered around the National Information and Documentation Center (NIDOC) and secondarily, the Cairo University Department of Librarianship and Archival Studies.

1.2.2 Revised Objectives

Shortly after the training project started, it was felt that the STI Training Project should be closely coordinated with its sister project of "Designing the

National STI Services in Egypt" contracted to Georgia Institute of Technology, with the purpose of preparing the necessary specialists who can serve in the implementation and management of the proposed national information services. Consequently, Dr. Vladimir Slamecka, Director of the Design Study, who was appointed as a consultant to the STI Training Project, suggested the following changes in the training project objectives:

> "the primary objective of the (STI) training at Catholic University would be the preparation of individuals for senior positions in the system of services being designed and developed jointly by the ASRT Steering Committee and the U.S. Contractor (Georgia Tech) (and) the selection of the trainees should be against job categories distinctly defined prior to the selection process..."[6]

At the end of the first phase of the STI Training Project, after receiving approval of the administrators of the ASRT, NSF, and AID, modifications were made in the training program, including the above mentioned changes in its objectives.

The main difference was a broadening of the scope of the training. The progress in development of the design of the national system led to the decision that the training should expand beyond NIDOC personnel. It became possible to define some specific technical careers and

(6) Memorandum No. VS/18 from Dr. Vladimir Slamecka to the Director of the STI Training Project dated April 2, 1980.

senior positions needed for the operation and management of the services being designed. Priority was then given to provide the trainees with the technical skills required for these careers so that they would be able to assume responsibility for the services being designed and later perhaps the management of some of these services. The list of the defined careers are given under Section 2.1.

1.3 Project Organization and Administration

1.3.1 The Contractor

The School of Library and Information Sciences of the Catholic University of America was selected as the contractor for the Egyptian STI Training Project.

Dr. Elizabeth W. Stone, Dean of the School, is well known for her work in library education -- in particular, staff development and continuing education. Her particular expertise is in the area of adult learning.

Dr. Bahaa El-Hadidy, Director of the project, has been a member of the School's faculty for over six years, developing and teaching courses in information science. As a native of Egypt, he speaks Arabic and has a full understanding and intimate knowledge of the social, economic and political background involved in the development of the Egyptian national information system. Dr. El-Hadidy was selected to participate in the U.S.-Egyptian

Symposium/Workshop on Planning an Egyptian National Scientific and Technical Information System and serve on the U.S.-Egyptian Program Committee on Scientific and Technical Information.

The University offered the program support services in the area of on-campus housing, health care, foreign language tutoring, and the International Student Services Department.

The University setting, the Washington, D.C. area, offered an ideal location for the training program. This area has six major universities and numerous federal libraries and information centers which are among the most technologically advanced in the world. It is also rich in information experts and is a center for exhibitions and professional meetings. This setting offered rich opportunities to the STI Training Project participants.

1.3.2 Organization

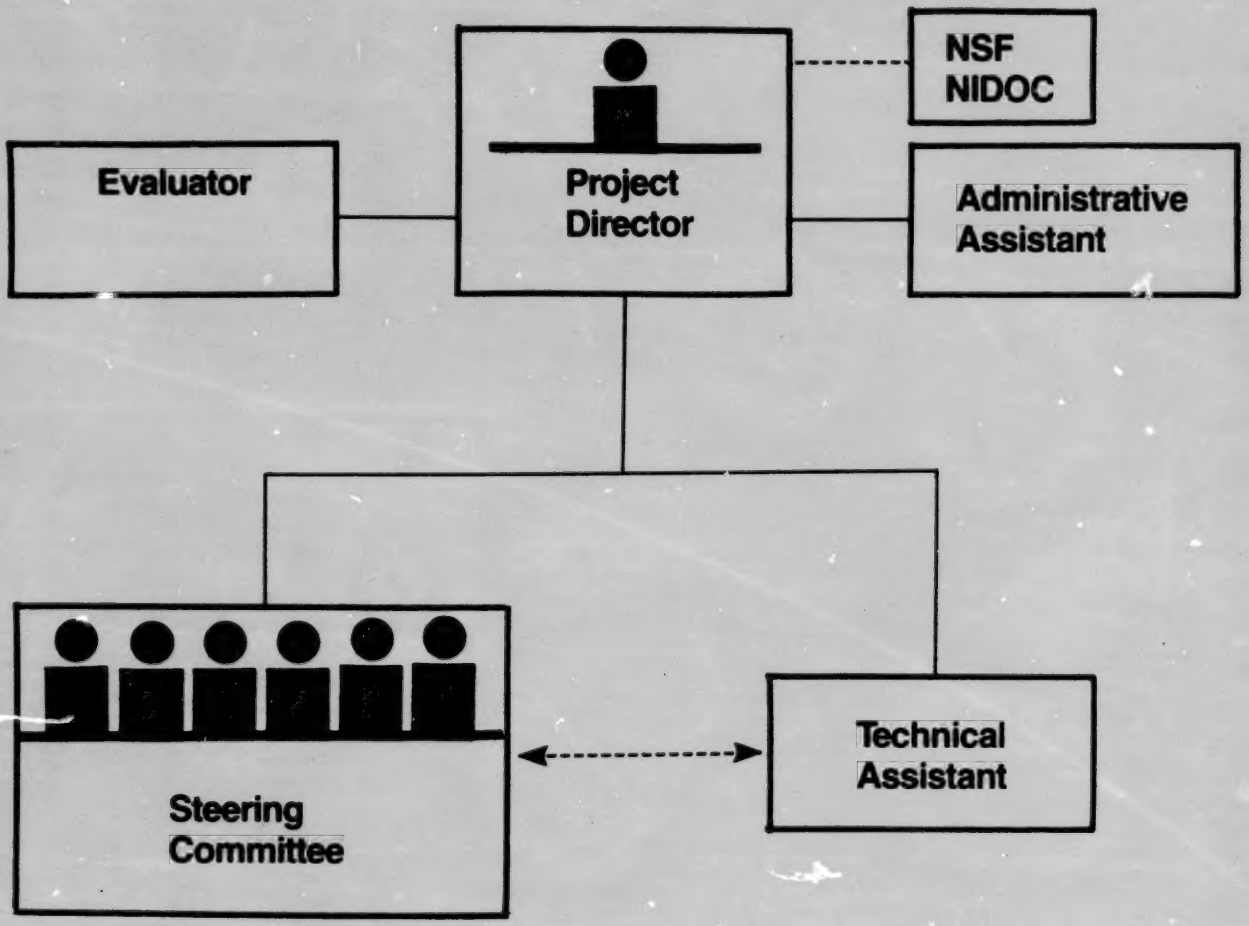
The STI Training Project organization is shown in Figure 3. It includes a project staff, an outside evaluator, and a steering committee composed of experts in the field.

1.3.3 Staff

The Project Staff was comprised of three positions: the director, a technical assistant, and an administrative assistant.

FIGURE 3

PROJECT ORGANIZATION



The Project Director was responsible for the project management and administration. He was also responsible for coordinating the Program with the National Science Foundation, NIDOC, Cairo University Department of Librarianship and Archival Studies, Georgia Institute of Technology School of Information and Computer Science, the trainees, Catholic University of America School of Library and Information Science, the Graduate Faculty and the Administration of the Catholic University of America, and the on-site training centers and institutions. He provided the technical supervision and monitoring of the project, and served as a counselor for the trainees.

The Technical Assistant had as the major task the operational details and logistics of the training program -- arranging courses, on-site training, and conferences, workshops, etc.

The Administrative Assistant was responsible for handling the many administrative details of the project, including the trainees' housing, travel, and finances for the trainees and the consultant/advisors.

1.3.4 The Steering Committee

One of the major attributes and strengths of the administration of the STI Training Project was the Steering Committee. The Steering Committee was formed to ensure the development of effective training programs for

each trainee, appropriate evaluation feedback and training program adjustments, and the integration of the varied training aspects of the Project -- academic coursework, in-service practical experience, and participation in professional meetings, seminars, and site visits to information centers.

The Steering Committee was composed of at least one member for each training area who served as the coordinator/advisor for that special subject area. As trainee coordinator, the member helped develop the individual trainee programs and served as the principal guidance counselor for the trainees in that area.

The specific contributions of the Steering Committee member were as follows:

1. Advising on developing individual integrated training programs for each trainee, consisting of the basic elements of the training; academic coursework; in-service practical experience; and participation in professional meetings, seminars, and site visits to information centers. The programs were custom made to fit the trainees' background experience and academic education.
2. Serving as the principle academic counselor for guidance of the trainees during their training.

3. Monitoring the progress of each trainee during their training program.

4. Assisting in the evaluation to be performed by the outside consultant.

5. Advising on modifying the individual trainee program, as deemed necessary, on the basis of the results of the evaluation of the program and of monitoring the trainee's progress.

Staff members of the training project and members of the Steering Committee who acted as trainee advisors and coordinated their programs are listed in Appendix A.

CHAPTER 2. THE TRAINING SYSTEM DESIGN

One approach for designing and developing training programs is the system approach model which has been the outgrowth of over twenty years of research into the learning process. It is based on the premise that training is not only a system, but also is a highly complex system which needs planning and control so that training goals are achieved efficiently and effectively[7]. A training system is also characterized by having several interdependent and interactive components, including evaluative feedback mechanisms.

This chapter describes the design of the major components of the training system, including the scope of training, the elements and strategies of training, and the mechanisms for evaluating the training.

2.1 The Scope of Training

The initial program of training was designed to train twelve information specialists in the following five areas, which became educational tracks:

1. Library Information Center Administration and Technical processing

(7) Taylor, W. R. Designing Training and Development Systems. American Management Association, Inc.; 1971.

2. Information and On-Line Services

3. Abstracting and Indexing

4. Scientific Editing and Publishing

5. Reprography

These tracks were selected as being the areas that were most needed to strengthen the services of NIDOC which acts as the focal point of the national information infrastructure. The twelve scheduled trainees were to be assigned among these tracks but with each having an individual program developed within the track.

As mentioned previously, with the development of the design study and the change of the objective of training to address the needs of the national information system, the scope of training was modified. Other areas of training were identified, and the number of tracks was increased from five to fourteen and organized as follows:

ADMINISTRATION

1. Library and Information Center Administration

2. Budgeting and Fiscal Management

3. Training Program Design

USER SERVICES

4. Information and On-Line Services

5. Resource Sharing

6. Marketing of Information Services

TECHNICAL PROCESSING

7. Abstracting and Indexing
8. Bibliographic Data Base Design
9. Union Catalog Design and Maintenance
10. Acquisitions Systems
11. Cataloging Systems

ANCILLARY SERVICES

12. Scientific Editing and Publishing
13. Reprography
14. Computer and Telecommunications Technology

The number of trainees was increased from twelve to fifteen. Two participants were trained in data base design. Only one trainee was assigned to each of the other tracks.

2.2 Elements and Strategies of Training

The selection of an approach to training is a difficult problem because of the inherent complexity of the process of changing the attitudes and capabilities of individuals being trained to attain certain levels of competency. The decision to use one strategy or another depends on the analysis of the training system from several standpoints: training objectives, trainees' qualifications and backgrounds, the number of trainees, available resources and facilities, time and costs.

The important factors which had to be taken into consideration in designing the Egyptian STI training system were as follows:

1. Most of the trainees had no previous formal education in library and information science. They were drawn from other disciplines to assume, without training, responsibilities in Egyptian information organizations such as NIDOC. In effect, the trainees lacked the core knowledge and techniques of library and information science.
2. In addition, the trainees lacked experience with modern information methods and practices, including operational skills in using computers, online terminals, and techniques of systems analysis and operations research.
3. The trainees also had to acquire the ability to learn through participation and hands-on experience rather than by the lecture method to which they were accustomed and is the prevalent technique of teaching in Egypt.
4. The trainees were limited in their ability to use sources of information in problem solving and other self-help needs. This was the result of the deficiency in the educational system in

Egypt which requires little or no reading other than lecture notes.

5. Although English language capability was a prerequisite for training, most of the trainees lacked sufficient proficiency to comprehend fully and communicate easily in English.

Other factors which impacted on the strategy and content of the training system were:

1. The varied backgrounds of the individual trainees.
2. Their arrival in the U.S. in small groups of three to five over a period of two years.
3. The varied objectives in the training programs of the individual trainees to prepare them for specific areas of responsibilities on their return to Egypt, ranging from abstracting and indexing to data base design to acquisitions of materials.

The design of the training system was also based on the following basic assumptions and training needs:

1. The development of professional competencies in library and information science to perform certain roles in the Egyptian national information system.
2. The need for practical work experience at the professional level so that what is learned in

CC 41

professional courses can be related to practical situations.

3. The development of an awareness and ability to continue professional education in order to cope with the continuous and accelerated changes in the field.
4. The ability to adapt and transfer what is learned in the United States to the different information system environments in Egypt. Thus emphasis was placed on learning techniques for exploring alternatives and changes in the environment.

Based on the above factors and requirements, it was determined that a multifaceted approach, utilizing several learning strategies, would be applied to the training program. The components of the program incorporated the following elements:

1. An orientation series to introduce the trainees to the program and acquaint them with the training site, including facilities and resources, project staff, and the local environment.
2. Formal course work to provide the trainees with the basic knowledge and technical skills required for satisfactory initial performance on the job in Egypt. A list of descriptions of the formal courses taken by the trainees is included in Appendix B.

3. In-service training to relate theory to actual practice and provide the trainees with the practical experience necessary to increase their professional skills to the point where proficiency in performance is attained.
4. Field visits to provide first-hand observation of several operations, processes, and situations. Further, field visits allowed the trainees to gather information on several library and information service operations related to their area of interest, for later application to their work activities.
5. Tutorials by specialized instructors to provide individualized assistance to meet the trainees' unique needs and guide them during the training program.
6. Seminars and workshops in specialized topics of importance to the development of the trainees' skills.
7. Attendance at professional meetings to observe current trends in the field and allow interaction with experts in the appropriate areas of library and information science.
8. Final wrap-up sessions with the project staff for the purpose of developing a conceptual paper

CCI 43

which applied the trainees' experience to their future assignments in the development of the national information system. Emphasis was placed on adapting the trainees' knowledge and experience to the local Egyptian environments. A list of titles of papers written by the trainees is given in Appendix C.

The above elements were incorporated in the individualized programs developed for each of the fifteen trainees. In developing these programs, it was considered essential that the formal course elements precede the practical in-service training so that the trainees would have the conceptual background and understanding of the field operations and get the maximum benefit from their practical experience. This resulted in a constraint on the scheduling of the trainees' program in terms of the period of their training needing to coincide with the beginning of the academic semester.

With the lack of essential knowledge and operational skills among professionals in the Egyptian information sector, it was necessary to direct the training towards the functional, procedural, and performance practices. However, with the anticipated management role which the trainees are expected to assume in the operation of the

national services, attention was also given to the management and administrative aspects.

The trainees' background and experiences were carefully considered in the individual design of each program. The development and implementation of the individualized programs are discussed in Chapter 3.

2.3 Evaluation of Training

The great diversity of the STI training project, with each program tailored to the needs of the individual and each incorporating a number of interrelated elements, necessitated a flexible and tailored approach to evaluation.

An outside evaluator was used to maintain objectivity and to involve one of the top experts in the field. The evaluator chosen was F. W. Lancaster, Professor of Library Science, at the Graduate School of Library and Information Science, University of Illinois.

The evaluation of the program was intended to be based upon:

1. the extraction of formal statements of objectives, at various levels, from the several types of program participants, and
2. an assessment of the success of the program in terms of the degree to which these objectives were judged to be achieved.

The program participants were the trainees themselves, their employers or supervisors in Egypt (i.e., for each trainee, the person who made the decision to release him or her to participate in the program), the Project Director, the trainee advisors, the instructional faculty at Catholic University, and the personnel responsible for arranging the internships at the various participating institutions.

The evaluation had both formative and summative elements. That is, at the end of the program there was a terminal evaluation which looked retrospectively at the program as a whole. The detailed results of this summative evaluation would have value in the planning and execution of similar programs in the future.

At the same time, however, it was intended that the evaluation should, as far as possible, be formative. That is, what was learned from evaluating the progress of the first group of trainees would allow us, if necessary, to make modifications in the program in order to improve its effectiveness for the second and subsequent groups. Moreover, since evaluative input from the trainees would be received continuously from the beginning of the program, problems could be identified as they occurred and corrective action taken to improve the effectiveness and responsiveness of the program for even the first group of trainees.

The evaluation was to have both formal and informal aspects. Formal procedures and forms were developed to collect observations and opinions of the several participants at various stages in the program. In addition, however, informal input to the evaluation would occur through discussions between the trainees and the Evaluator, the Program Director, their advisors and their instructors. Such discussions were expected to uncover problems not disclosed through the more formal evaluation procedures. The Program Director was asked to make a record of such problems as they were discovered, as well as actions taken as a consequence, and to convey this information to the Evaluator for input to the evaluation process.

The steps to be followed in the evaluation program were as follows:

1. Before leaving Egypt, each trainee completed a brief questionnaire to record reasons for participating in the program and personal goals and expectations regarding the program. At the same time, the employer or supervisor of each trainee completed a second brief questionnaire to record his or her objectives and expectations for the training program. These questionnaires are included in Appendix D.

2. When he had prepared the individualized program for each trainee (i.e., the courses to be taken, institutions to be visited, conferences to be attended, and the institution the trainee was to attend) the Program Director would deliver details of each trainee's program to the Evaluator specifying what he, the Program Director, expected the trainee to gain from the total experience.

3. Some two or three weeks after the trainees reached the United States they were to meet informally with the Evaluator. This meeting was intended to allow the Evaluator and trainees to become acquainted, to give each trainee the opportunity to expand upon his or her statement of objectives, and to permit the Evaluator to describe to the trainees what is expected of them in the way of input to the evaluation. During this visit to Catholic University, the Evaluator would also discuss details of the evaluation with the Program Director and meet with as many as possible of the faculty members participating in the program.

4. For each course attended by the trainees, the faculty member involved would be asked to deliver

to the Evaluator a copy of the course outline and a statement of the objectives of the course. The faculty member would be asked to complete a brief form on the progress of each trainee as the course progressed. One form would be completed after four weeks, an identical form after eight weeks, and a final form at the conclusion of the course. This form (included in Appendix D) would simply record the instructor's observations on the student's progress, and any problems encountered, on the basis of the student's participation in class discussions and performance on course assignments.

5. For each course taken, the student would also complete a brief evaluation form (Appendix D) after four weeks, after eight weeks and at the conclusion of the course. The student was asked to assess the value of the course in meeting his or her objectives, to record any problems encountered, and to give his or her estimate of progress achieved.

6. For each course, the instructor evaluation of the student and the student evaluation of the course were to be compared. The four-week and the eight-week comparisons were to be used in

formative evaluation. The Evaluator would inform the Project Director of problems or sources of dissatisfaction, if any were encountered, so that possible corrective action could be taken. Such corrective action might include moving a student to another course if the one in which he or she is enrolled appears not to be contributing to the student's objectives.

7. More or less the same procedures were to be adopted in the evaluation of the in-service training per se. Once it was known in which institution a trainee would work, the responsible person in that institution would be asked to prepare an outline of the program planned for the trainee, and also to indicate the objectives of the program (i.e., what learning experience was intended). Again, the supervisor and the trainee would both be asked to evaluate the experience, from their respective viewpoints, at intervals throughout the training period. These forms appear in Appendix D.
8. For the other elements in the complete education experience planned for each trainee, i.e., attendance at conferences, meetings, special

short courses, and the like, the trainee would be asked to complete a short form (Appendix D) to record his or her assessment of the value of this experience in meeting his or her personal objectives.

9. At approximately the midpoint of each student's program he or she would assess the extent to which the program has contributed to satisfying his or her original objectives (Appendix D).

10. At the conclusion of each trainee's program, and before the trainee returns to Egypt, he or she would complete an overall evaluation questionnaire (a slightly modified version of the original form, Appendix D) assessing the value of the program as a whole. In addition, the Evaluator would meet informally with each trainee in order to gain opinions, observations and reactions that may not be disclosed in the formal evaluation instruments.

11. The Project Director and, in particular, the trainees themselves would be encouraged to keep in touch with the Evaluator by telephone throughout the program so as to bring to his attention problems as they occurred.

12. At the end of the project and after most of the trainees had returned to Egypt, a final evaluation of the program from a longer-term perspective was to be conducted. One objective of this evaluation was to determine the extent to which the program had actually contributed to the trainee's effectiveness as an information professional in Egypt. Tangible evidence of the impact of the program would be sought, including such things as promotion or increased responsibilities. The trainee's employer or supervisor would also be asked to provide feedback on the effect of the program on the trainee's professional competence. Another important objective of this final summative evaluation would be to determine the secondary benefits of the program, i.e., the extent to which further transfer of training/experience to other information workers in Egypt (through formal courses or in other ways) had taken place.

13. The evaluation program itself was to be regarded as formative. That is, changes in the evaluation procedures would be made, as necessary, if those initially adopted failed in any way to collect the data needed to fully assess the

effectiveness of a program of this kind. In particular, what was learned in the evaluation of the experiences of the first group of students would be used to refine the procedures used with the subsequent groups.

The evaluation steps planned, although elaborate, would not result in the collection of large amounts of data of the type that would need extensive manipulation and correlation. Instead, the evaluation was conceived of as building up a type of case study on each trainee. In particular, it would track the progress and shifting expectations of each, and would identify factors that may be interfering with the achievement of each one's personal objectives. All data collected would be compared by the Evaluator so that potential problems or discrepancies could be found (e.g., discrepancies between a student's objectives and the educational program mapped out for that student). Any such problems/discrepancies would be brought to the attention of the Project Director as they were identified to permit program modifications to be made.

CHAPTER 3. DEVELOPMENT AND IMPLEMENTATION OF INDIVIDUALIZED TRAINING PROGRAMS

Whereas the previous chapter described the design of the major components of the training system, this chapter deals with the system development and implementation of the individualized programs of the trainees. The first part discusses the different stages of developing each program. The second part describes a case study of the development of a typical program of one trainee for the purpose of illustrating the steps involved in planning each program. The final section deals with the implementation of the training programs.

3.1 Concept of Training

The training project was designed for trainees with some formal science and technology qualifications, and with some information service experience, who would be given further education and training to improve their capabilities to perform present and future services in the developing Egyptian national information system. The education and training they received in the United States, therefore, was multifaceted, including primarily formal courses in relevant areas of study; practical experience in working environments; and individually supervised

projects and assignments related to their expected or projected tasks in Egypt.

The planning and developing of specific trainee programs included several stages:

1. Identifying goals
2. Specifying objectives to meet goals
3. Identifying trainee characteristics
4. Identifying education and training resources:
   a. for formal courses
   b. for experiential training
   c. for visits, meetings, conferences, and tutorials
5. Developing a program plan
6. Maintaining an on-going evaluation
7. Compiling a final evaluation

The training process was iterative in the sense that at any time any new information could recommend or even force a feedback to modify an earlier assumption or decision.

3.1.1 Determination of Training Objectives

This determination was made by the Project Director in consultation with the trainee advisor (Steering Committee member) and after a thorough review of the background and experience of the trainee and the role planned for the particular trainee in the developing national

system. The training objectives covered both the general area that included the trainee's specialty, and the specific task areas intended for the trainee in the information system, as far as that role could be determined.

3.1.2 Selection of Courses

The Project Director and the trainee advisor reviewed the course announcements of relevant departments in the Catholic University of America, the University of Maryland, George Washington University, and American University. A number of factors had to be taken into account: the availability, in that semester, of courses that matched the training objectives; the question of room in those classes; the problem of suitable courses in two local universities being offered at the same time, or scheduled too close together to allow time to travel from one institution to the other; the existence of prerequisite course requirements. Since there was a limit to the number of courses a trainee could take, the selection from available courses had to be balanced carefully, not only to match training objectives, but also to avoid a concentration in only one part of a trainee's list of training objectives. Decisions was based on official printed course descriptions, telephone conversations with teaching faculty, and other personal knowledge of the department and the course.

3.1.3 Selection of Sites for Training

The project staff had identified a number of training sites at the start of the whole project. The project staff and the trainee advisors added to those from personal knowledge and experience. Training sites were selected for trainees on the basis of the role intended for the trainee, or of the trainee's specialty, and of the suitability of the training site for learning and experience beyond the specialty. In addition, the training site was selected on the basis of the existence in the institution of a personal supervisor who would be sensitive to the trainees' needs. Once a site had been selected, the institution was required to submit a training plan; the trainee advisor then negotiated with the contact person in the institution to modify the training plan to suit the trainee's needs.

3.1.4 Monitoring of Training

Monitoring of the academic progress of the trainees during formal courses was done by the faculty responsible for the courses and the trainee advisor. Course records and grades were kept, and the project evaluator provided interim and final forms to be completed by faculty members. The trainee advisor was in constant contact with the trainee and there were regular consultations. In addition, the Project Director held weekly meetings with the

trainees. Monitoring of the on-site training was partly the responsibility of the training site's staff, especially the on-site supervisor. The Project Director was in constant communication with the trainees by telephone to provide counseling when necessary. At the end of the training period, there were debriefing sessions with the trainee advisor and the Project Director.

3.1.5 Evaluation of Training

Much of the evaluation was included in the monitoring process, as described above. In addition, the trainees had evaluation sessions with the project evaluator. At the end of each trainee's program there was a requirement to prepare a final paper, under the supervision of the trainee advisor. More details on the evaluation process are given under Chapters 2 and 5.

3.1.6 Limitations and Constraints

The limitations and constraints fell into three groups:

1. The availability of academic courses:
    a. in the appropriate semester
    b. without conflicts of time
    c. without prerequisite requirements
    d. constituting a good balance
2. The availability of training sites:

a. in the appropriate subject area

b. with good facilities

3. The identification of the precise future role of the trainee, since the design document for the future information system was not available. This problem is discussed further in Chapter 6.

3.2 Case Study

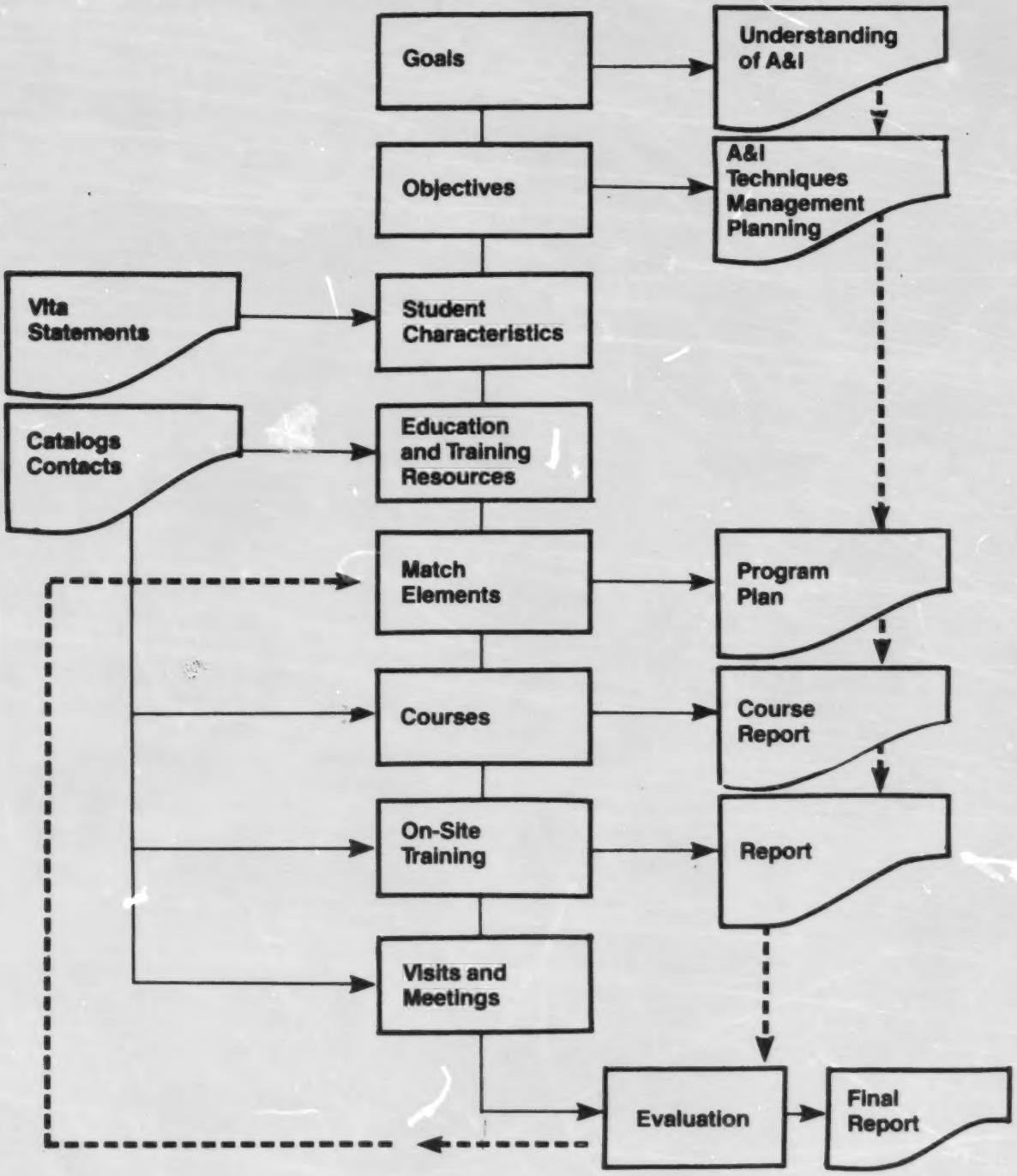
What follows is a case study based on the experience with one trainee in the early stages of the program. In a sense, the case was typical because it included all the elements (trainee background, professional experience, language ability, course selection, on-site training planning, supervision, and evaluation) that were involved in the planning of all other trainee programs in different degrees.

H. was a trainee with an undergraduate science background and with practical experience in indexing and abstracting, which was to be her future field of activity in the new STI system. H. had adequate Engling language skills, and also some knowledge of information processes, mostly oriented towards abstracing and indexing, and to the rather limited professional environment in which H. had previously worked.

Following is a description of the steps (as illustrated in the flow diagram given in Figure 4) that were

FIGURE 4

STUDENT PROGRAM



taken in planning and developing H.'s individualized training program.

1. Identification of Goals

In H.'s case, the identification of goals was fairly simple: a full understanding of indexing and abstracting principles and techniques, and therefore a knowledge of the major theories of indexing, both manual and mechanized, and the types and practices of abstracting.

2. Identification of Objectives

The objectives were more specific, that is, to understand:

a. the theory of indexing
b. the theory of abstracting
c. the development of index languages and thesauri
d. the preparation of abstracts
e. the application of theoretical principles to file organization and classification hierarchies
f. the history and present state of standardized cataloging and classification practice
g. the use of automated information storage and retrieval systems

h. the management and coordination of information and abstracting services

3. Assessment of Student Characteristics

The identification of goals and objectives for H. was based on information about the background, education and experience of the trainee, from documentary evidence such as a vita statement, and from information gained in personal interviews between the trainee, the Project Director, and the advisor.

4. Assessment of Educational and Training Resources

It was determined that trainees should be placed in formal courses in the Greater Washington Area, in the Catholic University of America, American University, the University of Maryland, and George Washington University, as appropriate. The catalogs of these universities were reviewed for courses relevant to H.'s program.

5. Matching of Elements

After a thorough review of H.'s vita statement, interviews, the available courses, and available on-site training environments, a program was developed by the Project Director and the trainee advisor.

6. Selection of Courses

Several courses in local universities were reviewed in detail. A course in Indexing and Abstracting at

American University was an obvious choice. Because H. did not have a strong data processing background, the University of Maryland's Introduction to Data Processing for Librarians at the graduate level was included, in addition to Information Sources and Services: Science and Technology, and the On-Line Search Lab (both offered at Catholic University).

These courses prepared H. in several ways: they were specific to indexing and abstracting skills; and they included general elements of information processing that offered a practical context to allow her to benefit from the experiential training of the next stage of her program.

In planning H.'s program, as with all others, the point that was stressed was that all trainees needed three levels of training: first, a general understanding of the information process; second, education in their own field of responsibility from management down to the details of specific duties; and third, thorough training in the specific tasks of their part in the information system.

7. Selection of Sites for Training

After a thorough review of H.'s background, and also of the available indexing and abstracting services, companies, etc., the American Petroleum Institute and the Franklin Research Institute were selected for practical field experience.

The American Petroleum Institute is a leading institute in the field of indexing and abstracting, in theory as well as practice. The Director, under whom H. worked, is a well-known authority on indexing and indexing techniques, especially for his early introduction of rigorous syntactical structures and also of good training techniques. H. worked with experienced indexers and abstracters at API and earned high praise from her peers and her supervisors.

The Franklin Research Institute is a leader in the indexing and abstracting field, with many years of practical production experience. H. gained greatly from her assignment and exposure to FRI's philosophy and production structure.

8. Selection of Field Visits and Professional Meetings

In the light of H.'s profile, attendance was arranged at a series of local meetings and at regional and national meetings of information science organizations, for example, at the Pittsburgh mid-year meeting of the American Society for Information Science. It was most satisfactory to see the interest that H. and United States information scientists shared in conversations at these meetings and conferences.

9. Feedback and Evaluation

A fundamental concept in the program design was attention to the student and the student's problems, including difficulties resulting from cultural differences. For this reason, an expert consultant was asked to serve on the Steering Committee and also to serve as teacher, tutor, and advisor for H. Interaction between H. and the trainee advisor at the initial stage encouraged a discussion and feedback system that became an integral part of her program.

Interim feedback included periodic reports on H.'s performance in formal courses and from on-site training reports.

3.3 Implementation of Training Programs

The following list of educational institutions, organizations, field visits, and workshops and seminars is included to illustrate the breadth and scope of training opportunities provided to the trainees:

1. Courses Taken
   - 18 at The Catholic University of America
   - 8 at George Washington University
   - 5 at American University
   - 1 at University of Maryland

2. Organizations Visited for On-Site Training
   - 19 in the Washington, D.C., Metropolitan Area
   - 23 outside the Washington, D.C., Metropolitan Area

3. Organizations Visited for Field Visits
   - 18 in the Washington, D.C., Metropolitan Area
   - 26 outside the Washington, D.C., Metropolitan Area

4. Workshops and Seminars Attended
   - 10 in the Washington, D.C., Metropolitan Area
   - 5 outside the Washington, D.C., Metropolitan Area

5. Professional Meetings Attended
   - 9 in the Washington, D.C., Metropolitan Area
   - 5 outside the Washington, D.C., Metropolitan Area

6. Tutors
   - 12 Total

A list of the host organizations in which the trainees received their on-site training is given in Appendix E.

3.4 Training Programs

Figure 5 illustrates the program of training developed for H., including objectives, courses, on-site training, field visits, and professional meetings. The individual programs for all the trainees are included in Appendix F.

FIGURE 5

TRAINING PROGRAM FOR H.

ABSTRACTING AND INDEXING

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Understanding of the theory of indexing and abstracting
- Development of indexing languages and thesaurus construction
- Preparation of abstracts
- Application of theoretical principles to file organization and classification typologies
- Development of standardized cataloging and classification practices
- Use of automated information retrieval systems
- Creation of individual users profiles; SDI techniques

COURSES

- Information Sources and Services: Science and Technology (LSC 708, Catholic University)
- On-Line Search Lab (LSC 727, Catholic University)
- Introduction to Data Processing for Libraries (LSC 690, University of Maryland)
- Concepts of Abstracting and Indexing (55.653, American University)

ON-SITE TRAINING

- Franklin Research Center, Philadelphia, Pennsylvania
- American Petroleum Institute, Central Abstracting and Indexing Services, New York, New York

FIGURE 5 (continued)

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
• National Federation of Indexing and Abstracting Services, Philadelphia, Pennsylvania • Philadelphia Enquirer, Philadelphia, Pennsylvania • Drexel University Library School, Philadelphia, Pennsylvania	• Federal DP Office Automation Exhibit, Washington, D.C. • National Online Meeting, New York, New York • American Society for Information Science (ASIS) Meeting, Pittsburgh, Pennsylvania

CHAPTER 4. THE TRAINING PARTICIPANTS

The effectiveness of training is much affected by how well participants for the training program are selected, and by the establishment of realistic prerequisites for entrance into the training program. In discussing this component of the training system, this chapter deals first with the problem of scheduling the training, then with the selection process, the trainees' characteristics, and the limitations and constraints that affected the process of selection of trainees.

4.1 Schedule of Training

The training program was originally designed to accommodate twelve trainees in two groups. Each group was to stay in the United States for a period of nine months. When the program was modified and the scope of training was expanded from five to fourteen tracks, the number of trainees was increased to fifteen, and they were scheduled to be trained in four groups. Further, the length of training was shortened to eight months for the first group and to six months for the other three groups for the following reasons:

1. Most of those who were qualified for the training program had obligations in Egypt, which

would not permit them to stay away for a longer period.

2. Initial evaluation of the training programs of the first group of trainees indicated that it was more effective to overlap the course work with the in-service training, and that the training could be accomplished in a shorter period.
3. Budgeting limitations required that the increase in the number of trainees be balanced by shortening the period of training.
4. It was also judged that the shortening of the training period would still allow the trainees to fulfill the objectives of the program successfully.

Group 1 consisting of five trainees arrived in the United States in January, 1980, and departed at the end of August, 1980. This eight-month period was divided among the diffent program elements as follows:

1. Orientation (two weeks)
2. Course work (four months)
3. On-site training (three months)
4. Field visits and attendance at workshops, seminars, and professional meetings (interspersed throughout the eight-month period)

5. Wrap-up and evaluation (two weeks)

The schedule of training for each group is shown in Figure 6.

As mentioned previously, after Group 1, training was shortened to six months. Training elements remained the same, with course work in the first three months and on-site training overlapping with course work and extending to the last three.

4.2 Selection of Trainees

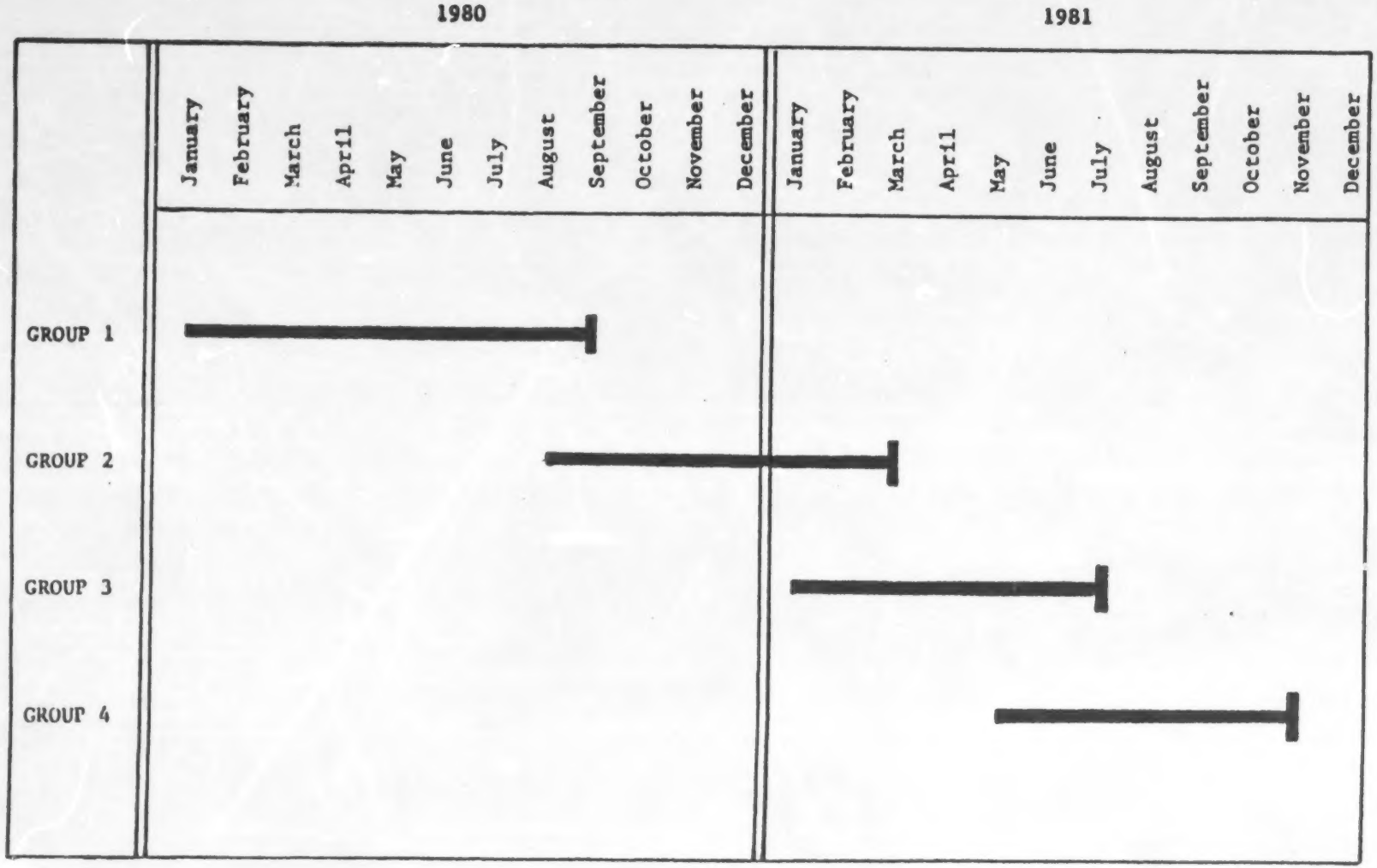
Trainees were selected for the program through an application and interview process in Cairo. Applications were solicited from the National Information and Documentation Center (NIDOC), Cairo University's Department of Librarianship and Archival Studies, and other institutions affiliated with the STI project of the Egyptian Academy of Scientific Research and Technology. Personal interviews were conducted by an ad hoc committee consisting of the Project Director and members of the Egyptian Steering Committee of the STI project, for the purpose of selecting qualified participants.

Major qualifications for participation in the program were:

1. Proficiency in the English language
2. Relevant academic background and work experience

FIGURE 6

SCHEDULE OF TRAINING



3. Personality (adaptability to foreign environments) and commitment to the project

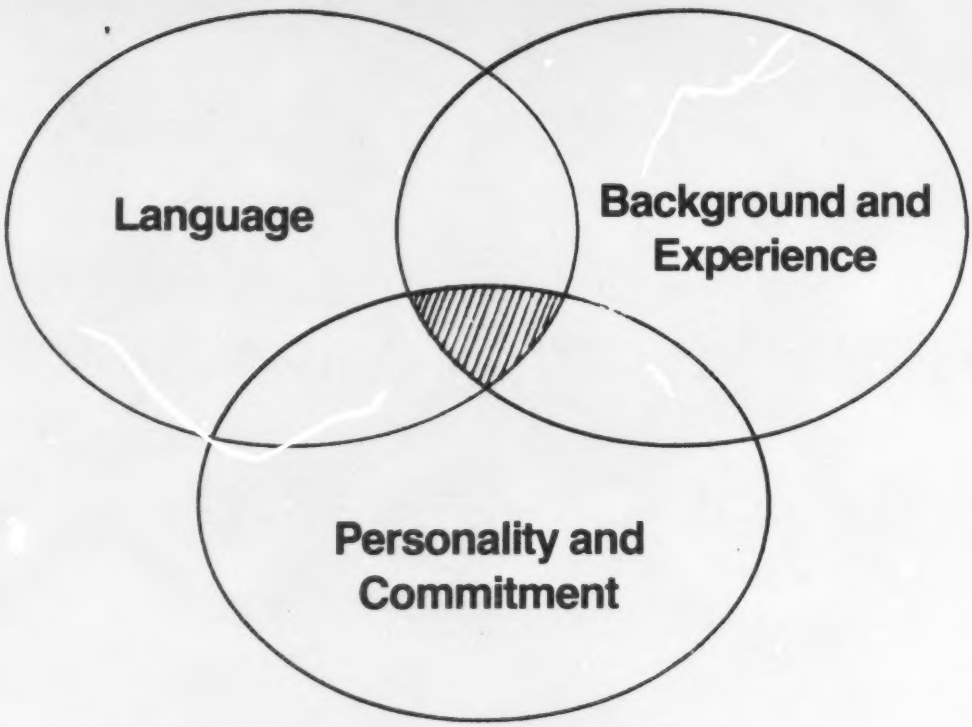
As shown in Figure 7, only a small number of candidates met all three qualifications. Language presented the greatest problem.

The selection of the first group had to be on a crash basis because of the short time between the date of approval of the contract and the established date of implementation. Another limitation of the first group was that the selection of the trainees had to be made from the staff of NIDOC who were able to leave their obligations in Egypt on a short notice. As a result, in order to have a sufficient number of trainees to start the training activities, the language requirement was relaxed with the understanding that special attention would be given to improve their language proficiency following their arrival in the United States.

With the change of the objectives of training to address the national information system requirements, the selection of the subsequent groups was made from not only NIDOC, but also from the staffs of other organizations and institutions associated with the development of the national information services. The larger group made possible the selection of candidates with better qualifications, including language proficiency.

FIGURE 7

TRAINEE QUALIFICATIONS



Another major change in the selection of the trainees of the subsequent groups was related to their preparation before coming to the United States. Evaluation of the first phase of the training program indicated that language proficiency and comprehension of technical vocabulary related to library and information science were major factors in the effectiveness of training. Consequently, a group of basic introductory readings for each area of training was prepared by the trainees' advisors for the purpose of familiarizing the trainees with the technical English vocabulary before coming to the United States. Copies of these materials were supplied to the trainees well before their departure from Egypt, and faculty members from Cairo University provided tutoring for the trainees in their reading requirements. The performance of the trainees during this phase of preparation was a final determining factor in their selection for the training in the United States. A list of the titles of material provided to the last three groups of trainees is given in Appendix G.

4.3 Characteristics of Trainees

Descriptive information about the trainees is summarized in the following group profiles:

Group 1
(5 trainees)

- Ranged in age from 33 to 39 years
- Held the following degrees:
  - Ph.D. (Geology and Physics)
  - B.S. (Geology and Chemistry)
  - B.S. (Chemistry and Zoology)
  - B.A. (Russian)
  - Secondary school certificate
- Held the following positions in Egypt:
  - Exchange and Gifts Librarian, NIDOC
  - Assistant Editorial Secretary of the Egyptian Journal of Microbiology, NIDOC
  - Scientific Documentalist, Bibliography Department, NIDOC
  - Head, Science Publishing Department, NIDOC
  - Head, Photography Unit, NIDOC

Group 2
(3 trainees)

- Ranged in age from 33 to 40 years
- Held the following degrees:
  - B.S. (Chemistry and Zoology)
  - B.A. (English Literature)
  - M.A.; Ph.D. in progress (Library Science)
- Held the following positions in Egypt:

- Assistant Teacher of Library Science, Cairo University
- Scientific Librarian, NIDOC
- Reference Librarian and Information Officer, Industrial Development Center for Arab States

Group 3
(4 trainees)

- o Ranged in age from 24 to 35 years
- o Held the following degrees:
  - B.A.; M.A. in progress (Library Science)
  - B.A. (Library Science)
  - B.S. (Statistics)
  - B.S. (Accounting); Diploma (Operations Research)
- o Held the following positions in Egypt:
  - Manager of Planning and Financing Affairs, Egyptian Academy of Science
  - Researcher, Bibliographic Laboratory, Cairo University
  - Researcher, Bibliographic Laboratory, Cairo University
  - Programmer, Cairo University Center for Computation

Group 4
(3 trainees)

- o Ranged in age from 25 to 36 years
- o Held the following degrees:
  - B.A. (Library Science)
  - B.S. (Applied Physics and Electronics and Communication)
  - Ph.D.; M.S. (Pharmacology)
- o Held the following positions in Egypt:
  - Programmer, Scientific Computation Center, Cairo University
  - Lecturer, Faculty of Engineering, Cairo University
  - Information and Documentation Specialist, NIDOC

Principal differences existed between the first group and the three successive groups. These differences were primarily:

1. More proficiency in English
2. Higher level of education and experience in modern practices of information systems such as computer programming and operations research
3. More participants with formal education and background in library science

4. More participants who had teaching experience as members of university teaching staffs

It was also noted that the last two groups were younger in age than the first two groups.

The curriculum vita for each of the trainees who participated in the program is given in Appendix H.

4.4 Limitations and Constraints

The project faced several limitations and constraints in the selection and training of program participants. A major limitation affecting the selection process was the lack of a sufficiently large number of eligible and qualified candidates from which to select participants for the project. As shown in Figure 7, only a small number of individuals met the three major selection criteria: English communication skills sufficient to read, write, and converse easily; academic background and training compatible with the project needs and objectives; and a personal commitment to and interest in program goals with a personality adaptable to foreign environments.

Other constraints that affected the number of individuals potentially eligible for training included the following:

1. It was expected that training participants be associated with the Egyptian Academy of Scientific Research and Technology (ASRT) or with

other organizations affiliated with the STI program so that their training would contribute to the successful development of the national information system. This expectation limited participation to those organizations with which the Egyptian Academy of Science could cooperate in this endeavor.

2. The reluctance of some candidates, especially women, to leave their families for an extended period of time. The family is the basis of the Egyptian society, and family obligations are given the highest priority.
3. The fact that some of the candidates held part-time jobs, in addition to their regular jobs, from which they could not take a leave of absence.

As mentioned previously, the major limitation affecting the actual training was the lack of a core knowledge of library and information science among the trainees selected for the program. Most trainees had academic preparation and on-the-job training in a specific subject area but little up-to-date knowledge of current information science principles and practices. This limitation had to be taken into consideration when selecting courses

and sites for training and limited to some extent the diversity and depth of the training program.

CHAPTER 5. EVALUATION OF THE TRAINING SYSTEM

Evaluation is an essential component of any training system to insure that the content, sequence, strategy, and elements of training are consistent with the performance objectives of the system, and are appropriate for the trainees. The basic objectives of evaluation is to collect data that will serve as a valid basis for improving the training system and maintaining quality control over its components. As mentioned in Chapter 3, the evaluation of the Egyptian training system had two major elements; that is, formative and summative. The formative evaluation was conducted by an external evaluator while the training was in progress for the purpose of improving the training before it is completed. The summative evaluation was conducted after the program was formatively evaluated and sufficiently revised to determine how successful the training had been, and to suggest ways in which similar programs might be improved in the future.

5.1 Formative Evaluation

The following is the report of the external evaluator, Professor F. W. Lancaster:

The author of this report, a professor of library and information science at the University of Illinois, was

retained by Catholic University to monitor the training program and act as an independent and "external" evaluator. He has no formal association with Catholic University and the opinions expressed in this report are entirely his own. Because of the small number of trainees involved, he has chosen to present the evaluation as a narrative rather than as a series of tables (of grades, expectations, etc.). The numerical data collected, while an essential component of the evaluation, involve so few cases that they have marginal interest in and of themselves. The evaluator's interactions with the trainees have been much more critical to the evaluation than the numerical data collected.

5.1.1 First Group of Trainees

With the first group of trainees, the procedures described in the evaluation plan were followed precisely. At least, an attempt was made to follow these procedures to the letter. As described later, some problems were encountered with the evaluation methods.

In general, the performance of the first group was considered quite satisfactory, especially in view of the fact that these five trainees were the guinea pigs of the entire program. Most were able to perform adequately in their courses and, after an initial settling-in period, to compete on an equal footing with the United States students.

This first phase of the evaluation revealed several positive trends. In the first place, at the end of the program the trainees exhibited more positive attitudes than they had at the beginning. Their expectations were positive to begin with but there was still considerable uncertainty as to what the program would do, how valuable it would be, and how each trainee would be able to "perform" in the various situations they would confront. In retrospect, the trainees indicated that the entire program of experiences had exceeded their expectations. They were more than satisfied with what they had received.

A second positive feature was that the professional horizons of the trainees were considerably widened by the program. That is, they learned more than they had expected to and were exposed to areas previously unfamiliar to them (especially in automated procedures). Their statements of what they had learned were invariably broader and more diverse than their statements of what they expected to learn had been.

Finally, the various elements in the program -- formal courses, meetings, visits, on-site training -- were shown to exhibit considerable synergy. Moreover, the less formal elements in the program, such as attendance at meetings and exhibitions and informal interaction with faculty, other information professionals, and students,

were perceived as having much greater value than the trainees had originally anticipated.

Regrettably, however, not everything was positive. To begin with, it was discovered that the trainees had not been well prepared as to what to expect from the program before they left Egypt. For example, they were unaware that they would be taking classes along with United States students and, therefore, in a sense competing with them.

The "background" of this first group was not as strong as it might have been. Some of the trainees arrived with considerable weakness in the comprehension of English and it was some time before they gained enough comprehension to benefit from the courses they were attending. In some cases, too, there was evidence of lack of adequate professional background. In particular, time was wasted because these trainees were unfamiliar with some of the basic concepts and terminology of library and information science. One of the trainees was found to have no previous academic background. While he benefited greatly from other experiences, this lack of background, together with some weakness in English, prevented him from doing more than auditing the courses that were planned for him.

Another problem was related to the perceived "relevance" of some of the material studied. That is, for some

things they were learning, the trainees were unable to recognize any direct or immediate applicability to the Egyptian situation. Part, at least, of this problem was attributable to the fact that most of the trainees seemed to have little idea of what they would be doing on their return to Egypt and what part, if any, each would play in the development of the national system. This uncertainty had two undesirable consequences. First, trainees were unable to "tailor" certain elements of their programs, especially assignments, to future activities in Egypt. Second, and perhaps more important, the uncertainty seemed to breed considerable unease and even insecurity among the group. The trainees repeatedly assured the evaluator that their only real concern was what they would find themselves doing when they returned home. They hoped that, having been motivated and given further education, they would not merely go back to "business as before".

Finally, the evaluator reached the conclusion that this first group of trainees exhibited little potential for "transfer of training". That is, he did not perceive them as having great strength as potential for "transfer of training". That is, he did not perceive them as having great strength as potential educators, disseminating what they had been exposed to to other information professionals in Egypt.

As a result of the experience with the first group, the evaluator made a number of recommendations. For subsequent groups, it would be important to:

1. Select the trainees well in advance of their departure from Egypt.
2. Identify their interests and plan a group of courses at the earliest possible moment.
3. Have the coordinators select a group of basic introductory readings for each trainee in order to familiarize them with the English "vocabulary" before coming to the United States. Copies of these materials should be supplied to the trainees well before their departure from Egypt.

The number of possible "tracks" (administration, information retrieval, reprography, etc.) can probably be identified in advance and an appropriate set of introductory readings selected for each. This would allow the Program Director to carry the readings with him on his visits to Egypt and thus to distribute them to the trainees at the time they are selected.

It was also considered desirable to prepare a descriptive brochure about the program. This brochure would describe the various components of the program -- courses, internships, etc. -- and give details on selection criteria,

objectives, financial support, etc. The brochure should also include some "fear allaying" statements from the present trainees. It should be distributed to all appropriate institutions well in advance of the Program Director's visits to Egypt to participate in the selection of future trainees.

A more fundamental question, however, was raised about the program and about all programs of this type. Unless a foreign student has a remarkable command of English he/she will be at a great disadvantage if thrown into a course with a group of English speaking students. Not only will he/she have problems with the language, he/she will also have problems with the pace at which new material is presented. At the same time, one of the greatest potential benefits of a program of this kind is "transfer of training". That is, trainees should have some ability to train others, at least in a preliminary way, when they return to their own country. To do this, however, they must have some training materials to take back with them.

These two factors suggested that the program as it had been planned may not be optimum in terms of meeting student needs. It suggested, in fact, the need for a more tailored, self-paced program in which the trainees will not be competing with native speakers of English, that is

some "directed independent study" approach. The evaluator urged that serious consideration be given to the following approach for future trainees:

1. For each trainee, select a program coordinator willing to prepare the necessary materials and work with a student on a one-to-one basis. The coordinator would, of course, be paid for this work.
2. The coordinator prepares instructional modules built around the special interests of a trainee. These modules will consist of: (a) a minitext, (b) readings, and (c) a workbook containing problems for the student. The student would work through this material, at his/her own pace, with the assistance of the coordinator. Classes could be taken on an audit basis to supplement the directed independent study. If this approach were adopted, it might be possible for some trainees to be given a combination of independent study, classes and internship throughout the entire period they are in the United States. It would also have the advantage that the directed independent study materials could be taken back to Egypt and used for "transfer of training".

Once a set of basic modules were created, he foresaw the possibility of building a student's study program by selecting from a menu of these modules. That is, the work need not be repeated anew for each new group of students. Clearly, however, the modules would need to be kept up to date.

5.1.2 Problems Encountered in the Evaluation

At the end of the first phase, the evaluation procedures themselves were re-assessed. It was concluded that there was considerable evidence of "evaluation overkill". There were just too many forms to be completed. Moreover, the data provided by some of these was judged to have only marginal utility to the evaluation process. Further, while no difficulties were encountered in getting the trainees to complete the necessary forms, it proved not at all easy to get the evaluation forms completed by the other participants. In particular, little success in this was achieved with the supervisors of the on-site training activities.

It was the opinion of the evaluator that most was learned from the general "before and after" questionnaires and, more particularly, from face-to-face interviews with the trainees early in their program and again towards its conclusion. The other evaluation instruments added only

marginally to these devices while, at the same time, being burdensome to administer.

For the second group of trainees, the evaluator relied entirely on:

1. the before and after questionnaires,
2. interviews with the trainees some weeks into the program (rather than at the very beginning), and again toward the conclusion of their stay in the U.S., and
3. telephone interviews with their instructors.

With the third and fourth group of trainees, even the instructor interviews were dropped unless evidence existed that a trainee was having considerable difficulty with a particular course. As the program progressed, then, the evaluation became more informal, which seemed a sensible approach to adopt with the small groups participating in the program at any one time.

5.1.3 The Later Groups

As expected, much was learned from the first group. The later groups were better selected, were better prepared on arrival, were more proficient in English and, in general, had stronger professional backgrounds. Moreover, the later groups exhibited greater potential for transfer of training. Modifications in the on-site training

component, with trainees tending to visit more institutions and to spend less time at each, seemed to be a considerable improvement. The limited experiments with "directed independent study" were highly successful. While there was some difference of opinion among the trainees as to whether the formal coursework or the on-site training was the most valuable component in the program, a conclusion reached with the first group was consistently re-confirmed: that a considerable and effective synergy existed among all the components. The ability to attend professional meetings, and to interact with experienced information specialists, was perceived to be an extremely valuable aspect of the entire program.

One can be well satisfied with the performance of the entire group in formal coursework. The grades achieved indicate that the group seems to have held its own quite well with the United States students participating in these courses. Reaction to the courses was positive. While a large amount of work was involved, particularly in reading, the benefits were judged to be great. Many new things were learned, particularly in the area of automation. In most courses, the trainee was able to perceive the relevance of the material to the Egyptian situation and to tailor some of the projects/assignments to his or her special interests. As expected, the courses specially

developed around the interests of a single trainee received the highest praise from those involved.

All trainees came to the program with positive expectations and all expressed a high degree of satisfaction with their experience. In general, the satisfaction exceeded the initial expectations. All groups tended to exhibit changing value systems vis-a-vis the various components of the program. Initially, most expressed the belief that formal coursework would be the most important element; in retrospect, fewer would put formal coursework in first position. This reinforces the findings noted early in the program: the less formal elements are underestimated at first but later judged of greatest value. This confirms that it was a wise decision to plan Phase I training within the United States rather than attempting it in situ in Egypt.

This is not to minimize the value of the courses. One suspects that some participants underestimate their value, feeling that they partly duplicate courses they have taken in Egypt. There seems little doubt, however, that the courses have been important in:

1. presenting brand new material,
2. acting as a "refresher" for material already encountered,

3. presenting a new perspective on much of this material.

The courses, visits, conferences, and other experiences seem to complement each other very effectively.

It has been the evaluator's impression that, on the whole, each succeeding group of trainees was better than the one preceding it. Moreover (and more importantly), each group seems to have benefited more than its predecessor. This tends to indicate that both the selection of the students and the design/execution of the program have been improving, a healthy sign.

In the opinion of the evaluator, the selection of Washington, D.C., as the site for the training and, in particular, of Catholic University as the agent of design and implementation, has proved to be a wise decision, for the following reasons:

1. Washington, D.C., is the ideal location for this activity because:
   a. neighboring universities offer strong courses in areas that complement Catholic University's own strengths,
   b. the area is rich in libraries and information centers,
   c. Washington, D.C., is a center for exhibitions and professional meetings.

2. In the evaluator's opinion, Catholic University has done an outstanding job with this program. In fact, the activity has been so well organized and implemented that his tasks as evaluator were made very simple.

3. (Perhaps most important.) It is a tremendous benefit to have a Project Director who is himself Egyptian. Not only does the Project Director know the Egyptian situation, and its special needs, but he is able to establish a great rapport with the trainees. They respect him and have confidence in him, and this has been a crucial element in the success of the program.

The evaluator's only real concern is a fear that the training component may not have been synchronized well with the actual implementation of the national system in Egypt. Implementation seems to be lagging too far behind training. Perhaps the entire training component took place too early. The training program is creating a cadre of skilled, capable, enthusiastic, and motivated professionals. It has been especially pleasing to note that the non-librarians have emerged with an altogether more positive attitude toward libraries, librarians, and information services. However, the edge of the enthusiasm and motivation could easily become blunted if, on their return

to Egypt, these professionals find that things are happening too slowly or that their training is not being used to its full advantage. Some means must be found for avoiding frustration and maintaining motivation. Otherwise, much of the benefit of the training program will be dissipated.

5.2 Summative Evaluation

A final summative evaluation of the program from a longer-term perspective was conducted in Egypt by the Project Director after all the groups of trainees returned to their professional positions. The objective of the final evaluation was to achieve a retrospective look at the training program from the viewpoint of both the participants and their supervisors. The evaluation sought to determine the impact of the training on the professional development of the trainees, the extent to which the program has actually contributed to their professional competence in Egypt and their readiness to assume specific roles and responsibilities in the national information services being designed and implemented. Tangible evidence of the impact of the program was sought, including such factors as promotion, increased responsibilities, or any significant role being given to the trainees in the development of the national information services.

Two interview schedules were prepared by the external evaluator and the Project Director. Importance was given to seeking spontaneity of response and to maintaining total independence between the answers of the supervisor and trainee.

5.2.1 Participants Evaluation of the Program

The Project Director held the interviews in November, 1981. The first group of trainees had been back on the job for 14 months, the second group for 9 months, and the third group for 4 months. Members of the fourth group had returned only one week before the evaluation was conducted. Therefore, they were not interviewed because they had not had enough time back on the job to gain any long-range perspective or to demonstrate their effectiveness.

The twelve trainees from the first three groups were interviewed separately without seeing the questions in advance. This eliminated the opportunity for the trainee to discuss answers with his/her colleagues or his/her supervisor.

The interview schedule was composed of twelve questions that were designed to be discussion points and points of departure for elaboration (see Figure 8). Three questions, numbers one, two, and five, asked the trainees to compare their work activities and responsibilities before and after their training. Three questions, numbers

FIGURE 8

FINAL TRAINING EVALUATION INTERVIEW
(applied to former trainees in Egypt, November 1981)

1. Please briefly describe the professional activities you have engaged in since your return to Egypt.

2. How are these activities different from those you engaged in before participation in the training program?

3. What do you consider to be the role that you could potentially play in the national information system (i.e., what tasks, responsibilities are you well prepared to accomplish)?

4. Do you feel that the training program prepared you adequately for fulfilling this role? If not, in what way did it fail? Was it too theoretical, too practical, were there obvious gaps in the coverage?

5. Do you have greater professional responsibilities now than you had before going through the training? If so, in what way?

6. Do you feel that you are now playing a significant role in the development of national information service capabilities? If so, in what way? If not, why not?

7. Do you feel that the program increased your professional motivation and enthusiasm?

8. If it did, has this motivation and enthusiasm continued since your return to Egypt? If not, why not?

9. In retrospect, what do you see as (a) the best points and (b) the worst points of the training experience?

10. What are your present needs for further, "continuing" education or training? In which areas or types of skills do you feel the need to gain more experience or background?

11. Looking back on the training program from your personal perspective, how would you rate it:

    Very valuable ____
    Valuable ____
    Of little value ____
    Of no value ____

12. Any further observations?

three, four, and six, dealt with the trainees' participation in the national information system and its development. Two questions, numbers seven and eight, inquired about professional motivation and enthusiasm. Two questions, numbers nine and eleven, asked for their views on the training program itself. One question asked the trainees to describe their needs for additional continuing education or training. The final question elicited any further opinions or observations they wanted to share.

5.2.1.1 Current Activities and Responsibilities

In response to questions on current assignments, five of the twelve trainees reported that they were doing work directly related to the design study of the national information system and three were doing work indirectly or marginally related.

Four trainees were working on personal projects, such as Master's theses or carrying on business and other assignments such as consulting in the private sector. This seems to be due to lack of assignments within the developing national system which are related to their specific training areas. Another reason was the desire of the trainees to apply the experience they gained from their training in the United States. One trainee reported that she had been assigned to develop an acquisition

policy for Cairo University Engineering Library for the first time in the history of that library.

Seven of the twelve trainees reported involvement in training of other staff. Of these, five had not been involved in training before their United States training experience.

One trainee showed considerable frustration as a result of not participating in any professional activities since his return from the United States because his role in the developing national system had not yet been prepared. Several spoke of trying to initiate new ideas after their return to Egypt but with marginal success due to lack of funds, lack of trained staff and other resources.

When asked how their present activities were different from those they were engaged in before their participation in the training program, most of the trainees felt that they were performing their work with better understanding, more depth, and in a more scientific and professional manner.

Five of the twelve trainees definitely felt they had greater professional responsibilities than they had before going through the training. Four saw increased responsibility only in terms of the project assignments, not in their regular work. However, none were promoted to new grades since the civil service system does not allow merit

promotion, but only allows promotion on the basis of seniority.

5.2.1.2 Role in the National Information System

All twelve trainees felt that, as a result of their training, they were now capable of taking a leading role in the activities of planning and developing the national information services. They saw their role in terms of the program area they studied.

However, only one of the trainees reported playing a significant role in developing the national information services capabilities at the time of the survey. They saw the situation as one of transition, and felt anxious to begin specific work on the project so that they could contribute their learning and experience. However, some felt that there were management and political problems that prevented them from doing this soon.

5.2.1.3 Professional Motivation and Enthusiasm

All twelve trainees responded that the training program had increased their professional motivation and enthusiasm to a great extent. However, this was diminishing because new skills acquired had not been used sufficiently since their return to Egypt. Many reasons were given including lack of equipment and other resources, management problems, lack of coordination, and delays in

making staff assignments for the development of the national information system.

Several trainees mentioned that some motivation and enthusiasm had been retained because of information service work not related to the national information project. One trainee reported that she lost her motivation to work for the national project, and moved to the private sector where her motivation has been reinvigorated. Another trainee suggested that a plan should be developed to give the trainees the opportunity to work together as a team and reactivate their enthusiasm.

5.2.1.4 Opinions on the Training Program

All but one of the trainees rated the training program as "very valuable", the highest choice. The remaining one rated it as "valuable". Some trainees preferred the formal courses, other preferred the in-service training. There was a unanimous feeling that the program was well designed and comprehensive. Several trainees mentioned that the strategy of including several integrated elements in the training program was very effective in broadening their scope and increasing their knowledge and skills. Some indicated that the personal attention and counselling given to them was helpful in overcoming the hardships of the foreign environment, and helped them to

progress in their study and to learn much in a short period of time.

5.2.1.5 Present Needs for Continuing Education

All twelve trainees felt the need for further training. Areas of training needs ranged from more training in their special fields, to areas such as application of modern technology, and financial management and administration of information systems. Two trainees felt the need for special training on how to train others. Another, who did not have any previous background or experience in the library field, felt the need to get more training in the library operations.

5.2.1.6 Further Comments

The open-ended question elicited a variety of responses. One trainee felt that the training program made him realize the importance and the role of information in national development and that now he has greater appreciation for his profession than ever before. Several other trainees felt that the training had motivated them to further their education and training in the field. Another trainee thought that one major impact of the training is that the trainees learned how to work together as a team, which is a major problem in developing countries. Several trainees regretted that they had not yet been able

to apply what they had learned to the national information system which should in turn contribute to the development of their country.

5.2.2 Supervisors' Evaluation of the Program

The interview schedule for the supervisor for each trainee was composed of seven questions (see Figure 9). The first question dealt with the trainee's work responsibilities assigned since his/her return. Two questions, number two and three, asked about the trainee's role in the national information system. Two questions, numbers four and five, inquired about the trainee's motivation and enthusiasm. One question asked about need for further continuing education. The final question asked for further observations.

Because a number of the trainees came from the same organization, each person was interviewed as the supervisor for several trainees. The interview schedule was repeated each time, so each trainee was commented on individually. One supervisor did not respond to the questions because the trainee was "not yet tested," had not yet been given responsibilities because "the role he is prepared for is not yet ready".

5.2.2.1 Current Responsibilities

The supervisors' descriptions of the work assigned to the trainees generally matched the trainees' descriptions. It was reported that some trainees were given various

FIGURE 9

FINAL TRAINING EVALUATION INTERVIEW
(applied to supervisors in Egypt, November 1981)

This interview relates to your observations concerning the training program in which (NAME) participated.

1. Has (NAME) been given increased responsibilities since his/her return to Egypt? If yes, in what way? If not, why not?

2. What do you consider to be the role that (NAME) could potentially play in the national information system (i.e., what tasks, responsibilities is he/she well prepared for)?

3. Do you feel that the training program was successful in preparing (NAME) to fulfill this role? If so, what evidence do you have? If not, in what way has the training failed?

4. Since (NAME) returned from training, have you observed any qualitive difference in him/her? (e.g., greater motivation or enthusiasm, greater self-assurance, etc.)?

5. Do you feel that (NAME) is still enthusiastic and motivated?

6. What type of further, continuing education/training does (NAME) need?

7. Any further observations?

responsibilities and assignments related to the activities of developing the national information system, such as gathering survey data and developing new data bases. Other trainees were given some increased responsibilities, such as developing new activities in their work divisions for the purpose of applying the experiences they gained in the United States. It was also mentioned that some trainees were given the responsibility of training not only former staff, but also the newly appointed staff. Some trainees were moved from the original divisions and were assigned to new responsibilities that are more appropriate to their training skills.

However, the major reason given for not assigning the trainees increased responsibilities was that the implementation of the national system, which requires reorganization and new activities, had not yet begun. One supervisor indicated that three trainees, who are faculty members, were giving first priority to the completion of their advanced degree programs at the university. Some personal qualities of trainees, such as shyness as a handicap in teaching and directing other personnel, were also mentioned as a reason for no new responsibilities being assigned.

A general response was that, whatever the assignment, the trainees were working with more capability, maturity,

understanding, and ability to communicate. Some trainees were commended for adding new ideas and new dimensions to their work.

5.2.2.2 Role in the National Information System

All supervisors clearly indicated that the training program had successfully prepared the trainees to fulfill a role in the national information system. The supervisors' description of the role for each trainee in the national system was closely related to the trainees' study areas in the training program.

As evidence of the success of the training, three supervisors cited the successful completion of the trainees' assignments and they were performed with creativity and confidence. Specific comments, such as "new perspectives", "more maturity", and "new ideas" were used repeatedly. One supervisor described a trainee as a "new person" after her return from her training in the United States.

5.2.2.3 Professional Motivation and Enthusiasm

Ten of the twelve interviews resulted in a positive response on improved motivation and enthusiasm, including examples of long hours on the job and working on vacation days. One trainee was described as eager to continue her education towards a Ph.D. degree. Other trainees were

described as having significantly improved their professional capabilities and attitudes. There was agreement with some trainees' responses, however, that organizational and management problems were having a negative effect on their motivation.

5.2.2.4 Continuing Education

Supervisors generally agreed with the need for continuing education for the trainees, particularly in their learning how to train staff needed for the development of improved library and information services. Lack of skilled manpower was mentioned repeatedly in emphasizing the need for teaching the trainees to become trainers of others. Working for advanced degrees was also recommended for several trainees.

5.2.2.5 Further Observations

The major comments made by the supervisors was that the training program was unique in that it was the first organized effort in this dimension to develop skilled professionals in library and information science in Egypt, and that it was highly successful in doing so. One supervisor felt that a good part of the success of the program was due to the dedication and professional interest of the Project Director.

5.2.3 Summary and Observations

Based on the interviews with the trainees and their supervisors, it is clear that the training program was effective. The trainees and their supervisors felt that those who had participated in the training program were better prepared to contribute to the development of the national information System.

The trainees had developed greater interest in their work and the national information service project. Their expressions of impatience in "getting started" are healthy signs of their interest, enthusiasm, and professional motivation. Some of the reason for their impatience is due to delay in the implementation of the project. However, it is frequently found that trainees who participate in staff development and continuing education activities and then return to their former work environment, particularly in developing countries, find it difficult to accept old ways and the slowness of initiating changes and new methods. The literature of staff development and continuing education includes many pleas for "something to be done" to get employers to make better use of the new skills and new ideas of trainees.

Another common or predictable problem leading to frustration resulted from some of the trainees returning to Egypt, after an extended absence for training in the

United States, to find themselves "in the middle of an academic year" or waiting for the work that they were trained for to be ready. Some were asked to do interim work, others were asked to do nothing.

It would seem highly desirable for the trainees to continue to meet periodically after their return to share experiences, ideas, and maintain their perspective and interest in the development of the national information system.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

The major objectives of the training project were to train a core group of Egyptian information specialists in the technical skills required for the development of the national information system and services. For this purpose, an integrated multifaceted training system was developed, utilizing several training strategies. The system was designed so that each training element would fit within an overall matrix oriented to provide the trainees with the necessary skills and capabilities in the shortest possible time. Each component of the training program was evaluated using formal and informal procedures which allowed the participants to review their learning experiences as the program proceeded. Further, a final evaluation was conducted which looked retrospectively at the program as a whole to determine its effectiveness. This chapter contains a discussion on the more important findings and conclusions resulting from the development and evaluation of the training program. Section 6.1 addresses the problems and constraints pertaining to the development of the training system. The next section (6.2) presents an overview of the major conclusions of the project. The remainder of the chapter (Section 6.3) is devoted to recommendations.

6.1 Problems and Limitations of the Training Project

The problems that had the greatest effect on the training project were mainly sociological and psychological, including language difficulties and cultural differences. Other problems resulted from the lack of pertinent professional backgrounds of the trainees, the heavy training workload required, and the lack of knowledge of the specific role that the trainees would eventually play in the developing national information system.

The continuous evaluative and monitoring system of the project made it possible to recognize and solve or mitigate most of the problems within the framework of the project once it was in process. Had the extent and depth of some problems been apparent before the project began, some of the modifications could have been made in the original project design. However, as with many projects of this kind, it is only the results of the completed project that can reveal the full effect of certain problems.

6.1.1 Language Difficulties

The greatest difficulty which the trainees had to deal with in their training project was their rather limited knowledge and command of the English language, both in terms of written and oral communication. The

language problem had several aspects. First, the need of the trainees to simply communicate, ask and answer questions, and understand statements. Second, the need to understand the formal instruction which constituted an essential part of the program. Third, the need of the trainees to fulfill the reading assignments and term papers required by their courses. Finally, the physical strain of dealing with new learning and cultural experiences for many hours at a time during on-site training.

The pace at which new material was presented in class was also a problem because of language difficulties. As a result, some trainees had difficulty keeping up with the reading assignments. This was particularly obvious with the first group of trainees, who were selected on a crash basis from among a limited number of candidates, and for whom the language requirements were relaxed. To alleviate the language problems, special attention was given to these trainees by providing them with private tutoring and counselling. As a result, their linguistic skills clearly improved. This was demonstrated in their work assignments, and in their communication with the project staff.

To meet the language problems, some consideration was also given to substituting for the regular course work, a more tailored, self-paced, directed independent study program for the successive groups of trainees. However,

this was found not to be practically feasible due to the large number of subject tracks involved in the training project. Instead, a limited directed study program combined with formal courses was adopted. This proved to be highly successful. In addition, providing the trainees in advance with basic introductory readings before coming to the United States proved to be highly effective in familiarizing the trainees with the English technical vocabulary needed for their training.

6.1.2 Cultural Differences

The differences in general cultural behavior can cause an underlying, unsettling effect for those coming from another society to the United States. In an article on organizing educational programs in developing countries, Von Ledebur indicated that "although the very different mode of life in a modern industrial society may exert a certain fascination, for an individual born and raised in a completely different and often tradition-anchored milieu it may in the long term imply a considerable mental strain; such strain has a negative effect on training"[8].

Some trainees felt a sense of deprivation and loneliness on being away from their families and colleagues for

(8) Von Ledebur, Freiherr Ernst-J. Op. cit., p. 91.

an extended period. This was mitigated to a certain extent by the creation of a substitute family consisting of the trainees, the project staff, the tutors, and the consultants. However, some trainees were upset by having to leave the substitute family to go alone and away from the Washington, D.C., area for on-site training. This had some effect on their ability to profit from the on-site training, and continuous counselling by telephone had to be provided to them while they were away.

The differences between the library and information profession and its institutions and operations in Egypt and the United States also constituted a problem. For example, in Egypt, up to this time, there has been much less recognition and understanding of the role of libraries and information services on the educational, research and development process. As a result, the assumptions and understandings of the trainees did not always mesh easily with the assumptions and understandings of the project staff, their tutors or their work colleagues in on-site training.

6.1.3 Lack of Pertinent Professional Background

Only four of the fifteen trainees involved in the training project had formal education in library and information science. The remaining eleven had their education in other disciplines and lacked the core

knowledge of the basic principles of library and information science. As a result, most of the trainees did not have the required general background to grasp the specialized topics in their areas of training. Some basic courses had to be taken by most of the trainees in addition to the courses they took in their areas of specialization. This limited the amount of course work the trainees could receive in their specific areas.

6.1.4 Academic Training and Workload

Another problem that limited the amount of training that the trainees could receive was the workload that they could sustain. The original assumptions had been four academic courses for credit, and on-site training period of about three months at two or more centers. Both of these workloads had to be modified in practice for the following reasons:

1. Language difficulties meant that some trainees had to spend extra time simply absorbing the material and reading support materials.
2. Lack of adequate professional background meant that trainees had to acquire basic and general knowledge as well as the knowledge in their specific courses.

3. Cultural differences added to the strain of the trainees so that they could not apply themselves as fully to the course work.

6.1.5 Identification of Trainees' Roles in the National Information System

A problem that was not strictly within the training project was the lack of specific information about the roles that the trainees would play in the national information system on their return to Egypt. It was known that they would have to operate in certain areas, and, of course, they had been chosen for their background in those areas. But the absence of information about the proposed structure of the national information system inhibited tailoring the elements of the training programs more specifically to the future role and activities of the trainees in the national system. However, one of the benefits of the program for the trainees was a strengthening and deepening of their general knowledge of information science and information services. This general knowledge might, in the long run, serve them just as beneficially in understanding their role in the developing national system and as a basis for further developing their specific skills.

6.2 Conclusions

The first and major conclusion of this project is that, in spite of the problems and limitations described above, the training program was successful in preparing a cadre of well-trained information specialists, who are capable and competent to assume various responsibilities in the system of services being designed and developed in Egypt. Individualized programs were designed and developed to train fifteen information specialists in fourteen areas needed for the operation and management of these services. The trainees' programs and the project as a whole was judged to be highly successful by the trainees, their supervisors in Egypt, and the external project evaluator. In general, the trainees' satisfaction with the programs of training far exceeded their expectations. The trainees' performance in academic courses and on-site training was found to be highly satisfactory by the faculty and the trainees' advisors. For example, the grades achieved by the trainees in their course work indicated that they completed their work successfully despite their language difficulties. Of the 48 courses taken for credit by the trainees, 18 were completed with an A grade, and 27 courses were completed with a B grade. Only two courses were completed with a C, and one course was not completed.

Results of the evaluation of the training program indicated that both the trainees and their supervisors in Egypt felt that the training had successfully prepared the trainees to contribute to the development of the national information system. The trainees were able to perform well in the various assignments they completed for the design of the national system. Further, they were able to add new ideas and new dimensions to their work.

A second conclusion is that one of the most important and valuable aspects of the project was the way it broadened and deepened the trainees' general understanding of library and information work. Most of the trainees conceded that they were able to perform their work, after their participation in the training, with better understanding and in a more scientific and professional manner. This is particularly important because of the general lack of well-trained personnel in Egypt, with adequate knowledge in the library and information field to contribute to the development of the national information system.

A third conclusion is that participation in the program significantly increased and strengthened the trainees' professional self-perception and motivation. This was clearly demonstrated by their eagerness to participate in the design and implementation of the national information system, their development of new

projects and their interest in applying the knowledge they learned to the development of their country. Even though some frustration resulted from the delays in assigning the trainees to specific roles in the developing national system, it was perceived that there was no alternative to having a cadre of trained personnel available as soon as the design plan was ready for implementation. Until the design plan became ready, the trainees could be assigned to the analysis activities and tasks of the design preparation phase which would better equip them for their future responsibilities in the developing system. Nevertheless, it should be recognized that after a period of study and training, a trainee is at a cross-road which could lead either to growth and enhanced productivity and accomplishment or, if given no change from his/her status prior to the training, could lead to frustration and diminished productivity.

A fourth conclusion is that a basic minimum of core knowledge concerned with the theoretical aspects, principles and techniques of the discipline of library and information science is essential and prerequisite for the successful preparation of personnel in any specialized area in the field. During the implementation of the training program it was found that the trainees who had no previous formal education in library and information

science felt the need to get more instruction and tutoring in the general theoretical aspects of the field so that they could understand and grasp the application in their specialized areas of training. While the main aim of the project was to provide practical experience in specific information operations and services, it was found that practice and theory cannot be successfully divorced.

A fifth conclusion derived from the trainees' evaluations was that, for short-term training, a multifaceted program consisting of several elements of learning strategies is much more effective in providing the required skills needed by professionals, who are expected to contribute to library and information services in their country. This is in contrast to programs that concentrate on one type of training or another, such as formal courses or in-service training alone. In multifaceted training, each element of training reinforces the other in the learning process with beneficial results both in general understanding and specific skills. It was also found that the less formal elements of training, such as participating in meetings and visiting exhibits, and informal interaction with faculty and other experienced information professionals were judged to be as valuable as the formal courses and on-site training. Further, the opportunity to work, however briefly, in a modern library or information

center was recognized to be of paramount value. All this leads to the conclusion that it was a wise decision to plan Phase I training in the United States rather than attempting it in situ in Egypt.

A sixth conclusion stems from a general agreement among all participants in the program and supervisors of the trainees, that a continuing education program for the trainees is essential to maximize their future contributions to the national information system. This is one of the most visible and universal characteristics in all professions everywhere, that is, it is no longer possible for anyone to think of professional education being terminated at any point. We are living in an era of accelerated change, therefore, it is essential for every professional to continue his or her professional role. This is an acute problem in developing countries, particularly in Egypt, because of the lack of opportunities, facilities and resources for continuing education of practicing professionals.

Finally, a seventh conclusion is that the project was a successful example of international cooperation between a developed and less developed country in the education and training of information professionals. During the development of the training project many United States experts and organizations were most cooperative in extending

their assistance to the training of the Egyptian information specialists. Such successful cooperation can provide the basis for further development of improved educational and training systems in developing countries. International cooperation in this area is necessary to help reduce the gap between developed and less developed countries.

6.3 Recommendations

The recommendations made in this report stem from the analysis, observations and conclusions resulting from the project. It is also based on the realization that the benefits and results achieved by the training need to be extended beyond the project itself, and that it is important to build on the foundation laid during this phase of manpower development.

6.3.1 Continuous Education of the Trainees

A major recommendation of this report is that a continuous education program for the participants in the training project should be developed at the earliest time, with the objectives of maintaining the trainees' motivation and enthusiasm, and furthering their preparation for the specific activities of the implementation phase of the national information system. It is suggested that the continuous education program begin with a short seminar

held in Egypt, during which two or three specialists from the United States would interact with the trainees as the seminar leaders. The seminar should focus on increasing the trainees' experience in working in teams, and improving their abilities in research/investigative methods, problem definitions, problem solving and decision making. It would apply the simulation methods, in dealing with actual problems.

The seminar would concentrate on identifying "problems" that need to be solved in the implementation of various facets of the national system in Egypt. It would seek to identify studies that need to be done or data that need to be collected in order to solve these problems and make sound decisions relating to the program.

It is also recommended that the trainees be given continuous support in updating their knowledge and maintaining their skills through the provision of publications concerned with the current state-of-the-art information, and travel support to appropriate conferences. meetings, and training seminars.

6.3.2 Extending the Training to Other Personnel in the Library and Information Sector

It is recommended that the benefits of training achieved in this project be extended to reach a wider audience than participated in the program. One of the

greatest benefits of the training program could be the transfer of training. This could be achieved by further developing the skills of the participants in the training project to train others in their own specialty areas. It is clear that a considerably larger number of trained personnel than the 15 trained in the Phase I project will be needed within a short time period for the improvement of library and information services in Egypt.

6.3.3 Developing the Indigenous Resources of Egypt for the Continuing Education of Professionals and Paraprofessionals

The lack of adequate instructional resources and facilities seriously hampers the continuing education and development of information workers in Egypt. It is recommended that a plan be developed, with the cooperation of United States experts, for preparing educational packages, including course modules, demonstration materials, and audiovisuals, particularly videotapes and films, that could be used for continuing education. The continuing education program should be designed to lead to a non-degree course certificate.

6.3.4 Extending the Cooperation in Manpower Development to the Formal Degree Program

Although short courses and practical training are valuable instruments for continuing education, and are

useful in transmitting the rapid changes and advances in information technology, they cannot and should not replace basic education and formal professional education. With the success of the international United States-Egyptian effort in developing the short-range training program, it is recommended that this cooperation be extended to a formal professional education program. It is suggested that a joint-degree program in library and information sicence be developed between a well-established library and information science school in the United States and an Egyptian university. The program would involve long-term cooperation in teaching, curriculum and faculty development with the ultimate objective of achieving a self-sustaining program at the Egyptian university. This would be an effective solution to the problem of developing the professional degree program in information science in Egypt.

6.3.5 Developing Future Short-Range Training Programs

Based on the analysis of the problems and limitations experienced during the Phase I training program, it is recommended that if a similar program is developed in the future, the following features should be included:

1. A pre-project in-depth orientation course in Cairo, emphasizing

a. basic professional knowledge

b. the United States library/information world

c. professional terminology

d. language ability

e. study methods appropriate for the United States environment

2. A strong initial orientation course in the United States, that would include:

a. orientation to the United States culture

b. orientation to United States academic and work customs

3. A carefully selected program of courses in United States universities, but with close supervision by a tutor, who should become very familiar with all of the trainee's courses, and should spend at least several hours every two weeks with the assigned trainee.

4. A program of on-site experiential training for each trainee, under the personal supervision of the trainee's tutor. This program should be integrated with appropriate professional conferences, workshops, seminars, and visits to libraries and information centers.

REFERENCES

Adimorah, E.N.O. "Problems of Scientific Information Work in Developing Countries." The Information Scientist. 10(4): 139-148; 1976.

Atherton, P. Guidelines for the Organization of Training Courses, Workshops and Seminars in Scientific and Technical Information and Documentation. Paris: UNESCO; April 1975 (SC/75/WS/29), 88 p.

Bloom, B.S.; Hastings, J.T.; Madaus, G.F. Handbook on Formative and Summative Evaluation of Student Learning. New York, McGraw-Hill, 1971, 923 p.

Boaz, M. "Some Current Concepts about Library Education." College and Research Libraries. 33(January): 18-23; 1972.

Bonn, G.S. (ed.). Library Education and Training in Developing Countries. Honolulu, Hawaii, East-West Center Press, 1966, 199 p.

Bowden, R. "Improving Library Education in the Developing Countries: A UNESCO and Loughborough University Experiment." UNESCO Bulletin for Libraries. 30(5): 255-261; 1976.

Dick, W.; Carey, L. The Systematic Design of Instruction. Glenview, IL: Scott, Foresman and Company; 1978, 216 p.

Eres, B.K. "Transfer of Information Technology to Less Developed Countries: A System Approach." Journal of the American Society for Information Science. 32(2): 97-102; 1981.

Foskett, D. "Survey of Training Programmes in Information and Library Science." UNESCO Bulletin for Libraries. 29(1): 23-32; 1975.

Goldstein, E.; Wasserman, P. "Training and Development of a Library and Technical Information Staff." Special Libraries. 72(3): 290-294; 1981.

International Federation for Documentation. Current Issues and Trends in Education and Training for Information Work in Developing and Developed Countries. The Hague: FID; 1981. (FID Publication 595). 193 p.

International Federation for Documentation. Education and Training: Theory and Provision. The Hague: FID; 1979. (FID Publication 576). 149 p.

International Federation for Documentation. Education and Training for Information Services in Business and Industry in Developing and Developed Countries. The Hague: FID; 1980. (FID Publication 548).

Karen, C. Guidelines on the Planning of National, Scientific and Technological Information Systems. Paris: UNESCO; 1975. (SC/75/WS/39)

Karen, C.; Harmon, L. "Information Services Issues in Less Developed Countries." Annual Review of Information Science and Technology. 15: 289-324; 1980.

Kasem, Hishmat M.A. "Administrative Information Services in the Arab Republic of Egypt." UNESCO Bulletin for Libraries. 30(4): 210-217; 1976.

Lancaster, F.W. Guidelines for the Evaluation of Training Courses, Workshops and Seminars in Scientific and Technical Information and Documentation. Paris: UNESCO; August 1975 (SC/75/WS/44), 63 p.

Menou, M.J. Strategic Issues Regarding Basic Education Programs in Information Science in Less Developed Countries. International Federation of Documentation. Seminar on Education in Information Science. FID/ET/II/1. Edinburgh, 18-21 September 1978.

Mowat, I. "Training the Future Professionals." Library Review. 29: 2-7; 1980.

Munn, R.F. "The Use of Modern Technology in the Improvement of Information Resources and Services in Developing Countries." International Library Review. 3: 9-13; 1971.

Neelameghan, A. Guidelines for Policy on Information Manpower Development. Paris: UNESCO; 1977 March. 48 p.

Perry, B.J. "Information Work and Workers in the Coming Decade: Manpower Requirements and Training." ASLIB Proceedings. 24: 556-561; 1972.

"Planning Manpower for Documentation, Library and Archives Service." In: International Conference on the Planning of National Documentation, Library and Archives Intrastructure. Paris: UNESCO; September 1974 (COM-74/NATIS/4), p. 35-48.

Robredo, J. "Problems Involved in Setting Up and Operating Information Networks in the Developing Countries." UNESCO Bulletin for Libraries. 30(5): 251-254; 1976.

Saracevic, T. "Information Science Education and Development." UNESCO Bulletin for Libraries. 31(3): 134-141; 1977.

Saracevic, T. "Perception of the Needs for Scientific and Technical Information in Less Developed Countries." Journal of Documentation. 36(3): 214-267; 1980.

Saracevic, T. "Training and Education of Information Scientists in Latin America." UNESCO Journal for Information Science and Librarianship. 2(3): 170-179; 1980.

Sheldon, B.E. (ed.). Planning and Evaluating Library Training Programs: A Guide for Library Leaders, Staffs and Advisory Groups. Prepared by the Leadership Training Institute, School of Library Science, Florida State University, Tallahassee, Florida; 1973.

Stone, E.; Patrick, R.J.; Conroy, B. Continuing Library and Information Science Education. A Final Report to the National Commission on Libraries and Information Science. Washington, D.C.: American Society of Information Science; 1974.

Tell, B.V. "The Changing Role of Library and Information Centre Specialists." International Forum of Information and Documentation. 4(1): 32-6; 1979.

Tracy, W.R. Designing Training and Development Systems. New York: American Management Association, Inc.; 1971.

Tyler, R.W. Basic Principles of Curriculum and Instruction. Chicago: University of Chicago Press; 1949, 128 p.

Wasserman, P. "International Educational Patterns in Information Science: Characteristics and Issues." American Society for Information Science Annual Meeting Proceedings. 12: 69-70; 1975.

Wilson, T.D. Guidelines for Developing and Implementing a National Plan for Training and Education in Information Use. Paris: UNESCO; 1979, 54 p.

Zahawi, F. Experiences in Regional Training Schemes for the Arab States with Particular Problems that Arise in These Schemes. International Federation for Documentation. Seminar on Education in Information Science. FID/ET/II/4. Edinburgh, 18-21 September 1978.

APPENDIX A

Project Staff and Advisors

PROJECT STAFF

DIRECTOR

Dr. Bahaa El-Hadidy, Assistant Professor
School of Library and Information Science
The Catholic University of America
Washington, D.C. 20064

TECHNICAL ASSISTANT TO THE DIRECTOR

Ms. Patricia K. Smith (Dec., 1979 - Dec., 1980)
Information Consultant

Ms. Kathryn Mendenhall, Research Scientist (Jan. - Nov., 1982)
Battelle Information Systems
Vienna, Virginia

ADMINISTRATIVE ASSISTANT TO THE DIRECTOR

Ms. Mary Hawkins
4321 Van Ness Street, NW
Washington, D.C.

PROJECT EVALUATOR

Professor F. Wilfrid Lancaster
Graduate School of Library and Information Science
University of Illinois
Urbana, Illinois 61801

Steering Committee Members and Advisors

Mr. Edmond Applebaum,
Library Consultant
7322 Edmonston Road
College Park, MD 20740
Telephone: (301)474-7322

Acquisitions (Program 7) and Union Cataloging (Program 6)

Dr. David Batty
Alpha Omega Group, Inc.
8121 Georgia Avenue
Silver Spring, MD 20910
Telephone: (301)589-1041 Office
(301)593-8901 Home

Abstracting and Indexing (Program 3) and Cataloging (Program 14)

Mr. Robert Day, Director
ISI Press
Institute for Scientific Information
3501 Market Street
Philadelphia, PA 19104
Telephone: (215)386-0100 Office

Publishing (Program 4)

Dr. Jose Marie Griffiths,
Consultant
King Research
6000 Executive Blvd., Suite 200
Rockville, MD 20852
Telephone: (301)881-6766 Office

Computer and Telecommunications Technology (Program 10)

Mr. Robert Laudau,
President
Science Information Association
3514 Plyers Mill Road
Kensington, MD 20795
Telephone: (301)949-0220

Reprography (Program 5)

Dr. John Lorenz,
Library Consultant
5629 Newington Road
Bethesda, MD 20016
Telephone: (301)320-4651

Senior Advisor

Dr. Anthony Norcio,
Professor of Computer Science
U.S. Naval Academy
876 Chestnut Tree Drive
Annapolis, MD 21401
Telephone: (301)267-2797 Office
(301)757-5176 Home

Data Base Design (Programs 8 and 15)

Dr. Fred Peterson,
Director of Libraries
Catholic University Library
Mullen Hall
Catholic University of America
Washington, D.C. 20064
Telephone: (202)635-5055

Library Administration (Program 1)

Ms. Barbara Robinson
Metropolitan Washington Council of Governments
1875 I Street, N.W.
Washington, D.C. 20006
Telephone: (202)223-6800

Resource Sharing (Program 9)

Dr. Vladimir Slamecka,
Professor
Georgia Institute of Technology
School of Information and Computer Science
Atlanta, GA 30332
Telephone: (404)894-3156 Office
(404)874-1337 Home

Advisor

Dr. Elizabeth Stone, Dean
School of Library and Information Science
Catholic University of America
Washington, D.C. 20064
Telephone: (202)635-5085 Office

Library Administration (Program 1)

Mr. Duane Webster, Director
Association of Research
Libraries/Office of
Management Studies (ARL/OMS)
1527 New Hampshire Avenue, N.W.
Washington, D.C. 20036
Telephone: (202)232-8656

Training Services Design
(Program 13)

Dr. Harriet Zais-Gabbert,
4200 Massachusetts Avenue,
N.W., Apt. 913
Washington, D.C. 20016
Telephone: (202)966-1949

Information Service Marketing
(Program 11) and Budgeting
and Fiscal Management
(Program 12)

APPENDIX B

Course Descriptions

COURSE DESCRIPTIONS

ADVANCED CATALOGING AND CLASSIFICATION (LSC 713, Catholic University)

Review of basic principles with continuous exercises in cataloging and classification of various library materials. Introduction to the Library of Congress classification system, with exercises in key schedules. Review of the Dewey system and introduction to classification theory, including facet classification.

APPLICATION OF COMPUTER TECHNOLOGY TO LIBRARY PROCESSES (LSC 732, Catholic University)

Introduction to the application of computers and related technology to library processes for librarians concerned with library automation management.

ASSOCIATION PUBLISHING (LBSC 512, George Washington University)

An in-depth examination of the publishing processes and publications associations, including magazines, journals, and newsletters, as well as books and financial materials. Topics include general and financial management; editorial procedures; design and production; circulation and fulfillment; marketing and promotion. Weekly assignments on a case study publication analysis are required. Allen J. Seeber, Director of Publications, American Public Health Association.

AUDIOVISUAL MATERIALS AND SERVICES (LSC 772, Catholic University)

Exploration of the expanding role of non-print media in all types of libraries and information/media centers. Emphasis upon the evaluation, selection, and use of audiovisual materials and equipment, and the management of media programs in libraries and information/media centers.

AUDIOVISUAL PUBLISHING (LBSC 509, George Washington University)

Editors and production specialists are increasingly expected to create in-house audio-visual programs. In this course students learn how to produce audio-visuals for their publishing company, business, agency or trade association using filmstrips, slide-tape presentations, and short films. In-class and home assignments cover how to write scenarios and scripts, select and modify visuals, produce recorded variations, develop sound effects, and identify talent. The course also covers audio-visual budgeting and marketing as well as standards for judging proposals and samples from out-of-house A-V consultants. Students prepare a slide-tape (filmstrip) on a topic predetermined with the instructor. Students must have access to a camera.

AU STI WORKSHOP ON COMPUTERS AND MICROGRAPHICS (55.654, American University)

The purpose of this new course is to provide the student (who is already knowledgable in either computer or micrographic technology by virtue of education and/or experience) the means to concentrate on the theories, tools and techniques of the interface between the two merging disciplines. The context of the course will be in the field of science and technology; however, principles and applications in other fields will also be covered. Micrographic Systems by David Costigan will be the textbook used; it will be supplemented by other computer oriented material from recent publications and studies.

BASIC MARKETINT MANAGEMENT (141.20, George Washington University)

Role of marketing in the socioeconomic system, consumer behavior analysis, impact of consumerism. Major decision areas of product planning, pricing, and distribution; tools of marketing research and demand analysis.

COMPUTER BASED INFORMATION RETRIEVAL (LSC 722, Catholic University)

Introduction to the basic principles of computer-based information organization and retrieval. Principles and techniques of document analysis and vocabulary control, including indexing, key-word-in-context, classifying, abstracting, and thesauri construction. Searching techniques and strategies of machine-readable databases, including on-line systems. Laboratory in the use of Lockheed DIALOG system and databases accessible through it. File organization techniques, design principles of mechanized systems, testing and evaluation, concept of relevance, and economics of the system.

CONCEPTS OF ABSTRACTING AND INDEXING (55.653, American University)

The abstracting and indexing of the scientific, technical and scholarly literature represents one of the most important intellectual functions of the new profession of information scientist. In fact, there are many who feel that all members of the professions should become skilled practitioners of these important communication techniques in order to provide for the rapid, timely and efficient dissemination of the results of pure and applied research. This course, though stressing the impact of automatic data processing and machine methods upon the dissemination of information deals with the conceptual foundations of the abstracting and indexing processes. Practical experience is not neglected, for although these processes are essentially "arts" which can be best learned on-the-job over many years, certain fundamental skills can be acquired through course work. It is assumed that although the problems facing each field or area of scientific and technical endeavor may be different, a common threat runs through all of them. Every effort will be made to relate the instructional material of the specific interests and subject matter area of each member of the class.

CONSUMER BEHAVIOR (11.602.31, American University)

Factors influencing consumer motivation and behavior. Consumer decision-making processes and their marketing implications.

DATA BASE MANAGEMENT SYSTEMS (55.635, American University)

This course covers the full spectrum of activities involved in data base processing and use of data base management systems. The course will include the basics of data and information; input/output processing and file organizations; data structures such as lists, trees, and networks; multi-key data base processing; data base models such as the DL/1, CODASYL, and Relational models; the ADABAS, SYSTEM 2000, TOTAL, IMS, IDMS, and MAGNUM data base management systems; how to evaluate and select a DBMS; the role and functions of the Data Base Administrator; and the future of data base systems.

DATA BASE SYSTEMS (245, George Washington University)

An in-depth approach to the understanding and use of the latest techniques for developing and implementing an effective data base system. Topics include data base organization, creation, and maintenance; evaluation criteria; standardization of data base systems; impact of packaged data management systems; and analysis of the current state-of-the-art in data base management.

DEVELOPMENT OF HUMAN RESOURCES IN THE LIBRARY SYSTEM (LSC 755, Catholic University)

Introduction to management systems and objectives historically and in a library setting. Descriptive model analysis of human behavior and theories of personality. Study of the management of the library system and the workers in that system. Assessment of the strategies for managing the library's human resources.

FUNDAMENTALS OF PROOFREADING AND EDITING (LBSC 503, George Washington University)

A practical intensive introduction to basic editorial skills, featuring discussion of opportunities and practices, particularly in entry-level proofreading and copy-editing work. Extensive weekly homework assignments designed to help class members. Master editing and proofreading marks, word usage, Chicago and Government Printing

Office styles, consistency, fine points of grammar, and other proofreading and copy-editing problems. Introduction to the publication process, tables, footnotes, bibliographies, queries, newswriting, reports, and freelancing. Students are expected to be skilled in basic grammar.

INDEPENDENT STUDY (LSC 900, Catholic University)

Advanced study in on-line searching using Lockheed Information Systems, with emphasis on techniques of searching and evaluating the effectiveness of search results.

INFORMATION MANAGEMENT (LSC 743, Catholic University)

Introduction to the field with a focus on the solution of information related problems through the systems approach in the fields of libraries, information centers, business records and file maintenance; understanding the effect of office technology, data processing, micrographics, systems, procedures and controls, in the area of information management; viewing information as a commodity and determine its market/trends; understanding the economic, legal and political constraints of information; identifying various career opportunities in the field.

INFORMATION SOURCES AND SERVICES: SCIENCE AND TECHNOLOGY (LSC 708, Catholic University)

Introduction to the reference literature of science and technology, including the physical and biological sciences, engineering, agriculture, and medicine. Bibliographic control and dissemination of scientific information, including trends in indexing and retrieval methods. Practice in locating answers to representative science questions and in evaluating reference tools. Visits to outstanding science libraries within the area.

INTRODUCTION TO COMPUTERS AND INFORMATION PROCESSING (LSC 605, Catholic University)

Introduces student to the fundamentals of modern computer concepts and applications. The basic elements of computer systems are covered. The interrelationships between input, central processing, and output are explicated. Data representation in the computer is discussed. Various input/output media and storage devices are discussed relative to their advantages and limitations for library and information processing. Programming concepts and languages are reviewed. Advanced computer systems such as on-line, time sharing, and computer output on microfilm are discussed. The applications of computers to library operations are reviewed with regard to acquisitions, circulation, cataloging, MARC, serials control, union lists, and reference.

INTRODUCTION TO DATA PROCESSING FOR LIBRARIES (LSC 690, University of Maryland)

This course familiarizes the student with the basic principles of data processing and the ways in which data processing systems have been applied to library problems. The course consists of lectures and a data processing laboratory. The lecture series covers: punched card processing and its application to library operations; an introduction to systems analysis and the methodology for establishing systems requirements; and electronic data processing systems and their application to library operations. In the laboratory the student is taught the fundamentals of computer programming by actually developing computer programs to solve typical library problems and running them on an electronic data processing system.

INTRODUCTION TO LIBRARY SYSTEMS ANALYSIS (LSC 741, Catholic University)

Introduction to the principles and techniques for the analysis and evaluation of information systems. Application of analytical and evaluative techniques including charting, file analysis, cost/benefit analysis, sampling, user requirements studies, and evaluation research. Treatment of systems analysis within the systems development process.

INTRODUCTION TO MICROCOMPUTERS (150.21, George Washington University)

Introduction to the structure of microprocessors and microcomputers. Representation of information in the computer. Logic and storage devices. Processor structure, registers, transfer of information and control. Programming in microcomputers. I/O structure and auxiliary electronics. Interrupt structures, direct memory access. LSI and its implication for microcomputers. Arithmetic operations. Different microcomputer architectures.

INTRODUCTION TO TECHNICAL SERVICES IN LIBRARIES (LSC 603, Catholic University)

Principles, methods, and operations used in the acquisition, preparation, reproduction and circulation of library materials. Sources of information helpful in the execution of these tasks.

LIBRARY FISCAL MANAGEMENT (LSC 758, Catholic University)

Introduction to the various types of budgeting processes and the factors which have influenced their development and use. Course topics will include budget preparation, justification and allocation, budget approval, accounting, auditing, and the major types of budgeting systems including PPBS and zero-based budgeting.

THE MAGAZINE EDITOR (511, George Washington University)

This course gives an overview of the tasks and responsibilities performed by the editor of a small magazine. Topics include editorial policy, preparing illustrations, editing manuscripts, planning copy flow, copy and proof marking and printing and binding practices. Weekly assignments and a class project are required.

MANAGEMENT OF LIBRARIES (LSC 607, Catholic University)

Introduction to the management process and functions as applied to all types of libraries, with emphasis on

relevant management and organizational theories, concepts, and techniques. Special emphasis on the formulation of goals, the planning function, and the achievement of library goals through the proper utilization of human resources.

MARKETING LIBRARY AND INFORMATION SERVICES (LSC 748, Catholic University)

Seminar in marketing information and services utilizing marketing principles to meet specific, identifiable, public information needs. Topics will include client identification, market segmentation and analysis, the use of behavioral approaches to determine client needs, promotion and distribution channels, and the measurement and evaluation of the marketing effort.

MICROPROCESSORS AND MICROCOMPUTERS (203.20, George Washington University)

Microcomputer structure and components. Microprocessor architecture, registers, ALU, stacks, information flow, and control. Microprocessor support hardware, RAMS, ROMS, PLAs, counter timers. Hardware and software of typical 8-bit microcomputers. I/O structure in microcomputers; interrupts and DMA operations. 16-bit microprocessors, hardware structure and software capabilities. Bit-slice microprocessors.

THE NEW TECHNOLOGY IN LIBRARIES (LSC 733, Catholic University)

Review of the theories of communication and computer concepts. Introduction to micrographic technologies, lasers, holography, video disks, satellite technologies and other new technologies applicable to libraries and information centers.

O.C.L.C. LAB (LSC 714, Catholic University)

Introduction to the use of the Ohio College Library Center bibliographic system. Hands-on experience in the use of

the O.C.L.C. data base by completing laboratory assignments in searching and in inputing cataloging information for both monographs and serials. Fifteen to 20 hours on on-line practice is typical.

ON-LINE DATA BASES (LSC 725, Catholic University)

Overview and survey of existing machine-readable data bases, including typology, structure, access points, interrelationships, and documentation. The basic concepts of data base organization and file structure, on-line services and search systems available, and telecommunication options, pricing, search aids. Management considerations, current trends in uses and administration of on-line systems, and the effect of technology on future uses and services. Hands-on experience in searching data bases available from different vendors.

ON-LINE SEARCH LAB (LSC 727, Catholic University)

Introduction and training in all aspects of searching and search preparation for DIALOG (Lockhead Information Systems), ORBIT (System Development Corporation) and BRS (Bibliographic Retrieval Service). Search preparation techniques including use of published aids such as thesauri and user guides. Hands-on experience with each of the three systems. An average of 12 to 18 hours of on-line practice time is provided.

REAL TIME SYSTEMS (55.530, American University)

Practical coverage of large-scale, on-line systems design, implementation and management. Management and understanding of technical aspects of on-line systems. Hardware and software capabilities, teleprocessing concepts, distributed systems, man-machine factors, queuing theory, simulation tools, systems planning and control, security and privacy.

APPENDIX C

Titles of Papers Written by Trainees

- Course Papers
- Final Papers

COURSE PAPERS

Attempt to Solve Some Editorial Problems in the Egyptian Journals Published by NIDOC. Maurice A. Mikhail for Association Publishing.

Automation of Cataloging. A State-of-the-Art Review. Usama Mahmoud Aly for Application of Computer Technology to Library Processes.

Cancer Information Service in Egypt: Changing Users' Attitudes and Behavior. Aadel K. El-Duweini for Consumer Behavior.

Current Liberature Review. Laila H. Kamel for Data Base Management Systems.

Data Base Description. Laila H. Kamel for Online Data Bases.

Data Base Search Strategy on Treatment of Physically Handicapped Students. Laila H. Kamel for Online Data Bases.

Establishing an Initial Non-Print Collection on Basic Reference Sources and Reference Services. Yosriya M. Zayed for Audiovisual Materials.

Final Proposal. Eman Abdel-Rahman for Introduction to Library Systems Analysis.

Overhead Projector. Yosriya M. Zayed for Audiovisual Materials.

Plans for Effective Internal Communication within the National Information and Documentation Center (NIDOC). Aadel K. El-Duweini for Seminar on Public Relations for Library and Information Service.

A Proposal for Establishing A-V Unit for STI Project in Egypt. Yosriya M. Zayed for Audiovisual Materials.

Proposal for Measuring the Need for Drug Referral Center Among Pharmacists in Metropolitan Cairo, Egypt. Aadel K. El-Duweini for Introduction to Library Systems Analysis.

Research Paper on the Advantages of the On-line Data Bases. Laila H. Kamel for Data Base Management Systems.

Scientific and Technological Information: User Study and Marketing Research. Wahid El-Demerdash for Marketing of Information Services.

Selective Dissemination of Information for Scientific Community in Egypt. Aadel K. El-Duweini for Basic Marketing Management.

Suggestions to Develop Marketing of the Egyptian Periodicals Published by NIDOC. Maurice A. Mikhail for Association Publishing.

A Technical Proposal. Wahid El-Demerdash, et al, for Information Management.

Trinity College Library. A-V Department. Yosriya M. Zayed for Audiovisual Materials.

A Two-Day Workshop of Information Services. Yosriya M. Zayed for Development of Human Resources in the Library System.

FINAL PAPERS

Building a National Egyptian Bibliographic Data Base. Effat El-Shooky for Program 8 Data Base Design.

Building a National Egyptian Bibliographic Data Base. Laila H. Kamel for Program 15 Data Base Design.

Computer Communications Technology. Atef El-Sherbeni for Program 10 Computer and Telecommunications Technology.

Finalcial and Fiscal Management System to Support the Egyptian National Information System. Wahid El-Demerdash for Program 12 Budgeting and Fiscal Management.

A Plan for Establishing Office of Professional Development to Support the Egyptian National Information System. Yosriya M. Zayed for Program 13 Training Services Design.

Planning and Recommendations for an Egyptian National Union Catalog. Usama Mahmoud Aly for Program 6 Union Cataloging.

Planning for Acquisitions (Either Manual or Automated). Fekria Y. Tadros for Program 7 Acquisitions.

Resource Sharing in Egypt: Lessions to be Learned from the U.S. and How They Apply in Egypt for a Science and Technology Network. Eman Abdel-Rahman for Program 9 Resource Sharing.

Setting Up a Marketing Plan for Scientific and Technical Information Services in Egypt. Aadel K. El-Duweini for Program 11 Information Service Marketing.

A Shared Cataloging System to Support Egyptian Information Services. Shams M. Ali for Program 14 Cataloging Systems.

APPENDIX D

Formative Evaluation Forms

STUDENT EVALUATION
QUESTIONNAIRE

Name of student:

Congratulations on being selected to participate in the training program at Catholic University. To help in the evaluation of this program we would like you to answer a few questions regarding your expectations concerning the program. In other words, we would like to know what you hope to gain by participating.

1. What subject areas do you expect to study while in the U.S.? Be as specific as possible. It is not enough to answer in general terms such as "librarianship" or "information science".

2. What specific skills do you hope to acquire? List all the skills you would like to acquire in the U.S. (Some examples of specific skills would be: to learn how to construct a thesaurus, to learn how to prepare a comprehensive library budget, to learn how to prepare a collection development plan for a library).

3. In your own words please tell us in what way you expect the program will help you perform more effectively in the provision of library/information services when you return to Egypt.

4. The following items are possible benefits that might result from participation in this program. For each item, use the first line to indicate the value you placed on this benefit in deciding to participate in the program. Use the second line to record your assessment of the likelihood that the benefit will actually result from your participation. Answer by placing an X on each line at the point that best represents your assessment of value or likelihood.

1. Will increase the security of my present job:

High value /_____/ No value

Likely /_____/ Unlikely

2. Will help me relearn some of the things I have forgotten:

High value /_____/ No value

Likely /_____/ Unlikely

3. Will make me better known in the field:

High value /_____/ No value

Likely /_____/ Unlikely

4. Will make my work more challenging:

High value /_____/ No value

Likely /_____/ Unlikely

5. Will stimulate me intellectually:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

6. Will help me get up to date in my field:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

7. Will increase my network of professional contacts:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

8. Will give me a greater sense of professional competence:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

9. Will improve the quality of the services I can offer:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

10. Will remedy deficiencies in my professional training:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

11. Will help make my work more satisfying:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

12. Will allow me to be more versatile in the work I do:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

13. Will assist me in gaining promotion:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

14. Will enhance my long-term career prospects:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

15. Will give me financial gains:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

16. Will contribute to the attainment of my personal career goals:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

17. Will help me gain leadership capabilities in the profession:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

18. Will benefit my employer:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

19. Will assist me to develop a new career:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

20. Will allow me to learn through interaction with other professionals:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

21. Will increase my specialized skills:

High value /__/__/__/__/__/__/__/ No value

Likely /__/__/__/__/__/__/__/ Unlikely

5. The program at Catholic University will offer several different learning experiences. Please rank these experiences to indicate your expectations concerning the relative value each will have in satisfying your own objectives in participating in the program. Write 1 against the most valuable, 2 against the next most valuable, and so on.

Activity	Rank
Interaction with other students	
Formal coursework	
Attendance at professional meetings	
Visits to libraries and information centers	
Internship in a library or information center	
Informal interaction with faculty and other professionals in the U.S.	

6. Finally, we would like you to make a general estimate of how much you feel the training program can contribute to making you better prepared to provide effective library or information services when you return to Egypt. Circle the number on the scale that best represents your level of expectation:

1	2	3	4	5	6	7
Of major value to me						Of no value to me

EMPLOYER EVALUATION
QUESTIONNAIRE

As you know, one of your employees, has been selected to participate in a training program at Catholic University. To help us in the evaluation of this program we would like you to answer a few questions relating to your own expectations concerning this program. In other words, we would like to know what you hope this employee will gain from participating.

1. What subject areas do you want this employee to study? Be as specific as possible. It is not enough to answer in general terms (e.g.) "librarianship" or "information science").

2. Please list all the specific skills you want your employee to acquire while in the United States. (Examples of specific skills are: to learn how to construct a thesaurus, to learn how to search online data bases, to learn how to prepare a comprehensive library budget, to learn to prepare a collection development plan for a library).

3. In your own words please tell us in what way you expect the program will help your employee perform more effectively in the provision of library or information services on his/her return to Egypt:

4. Finally, we would like you to make a general estimate of how much you feel the program can contribute to making this individual better prepared to provide effective library or information services on his/her return to Egypt. Circle the number on the scale that best represents your level of expectation:

1	2	3	4	5	6	7
Of major value						Of no value

FACULTY EVALUATION OF STUDENT PROGRESS

Name of Student: _____

Course: _____

1. Based on your observation of this student so far (participation in class discussion, questions asked, assignments completed, or other indicators) would you judge his/her progress:

☐ Highly Satisfactory, ☐ Satisfactory, ☐ Unsatisfactory ?

2. If you have reason to believe that this student is having problems with this course, would you please identify the types of problems occurring.

3. If you have any other observations to make at this point on the progress/ performance of this student, please record them here.

STUDENT EVALUATION OF COURSE

Name of Student: _____

Course: _____

1. Please re-read the statement of your own objectives in participating in this program. Based on your experience with the course so far, would you judge it (choose one):

   ☐ Of great value in contributing to the satisfaction of your objectives

   ☐ Of minor value in contributing to the satisfaction of your objectives

   ☐ Of no value in contributing to the satisfaction of your objectives

2. As a result of participating in this course, have you identified some additional objectives that you did not identify in your original statement?

   ☐ No

   ☐ Yes. Please list the new objectives:

3. In relation to the newly identified objective(s), would you judge the course (choose one):

   ☐ Of great value

   ☐ Of minor value

   ☐ Of no value ?

4. If you are finding the course of little or no value in contributing to the satisfaction of your original or revised objectives, please explain in what way the course is a disappointment to you:

5. How would you judge your own progress in this course?

☐ Very satisfactory

☐ Satisfactory

☐ Unsatisfactory

6. Are you having any problems:

a) with communication in English? ☐ YES ☐ NO

b) in adapting to the teaching methods used? ☐ YES ☐ NO

c) in recognizing the relevance/transferability of what you are learning to the Egyptian situation? ☐ YES ☐ NO

If you are having any other problems with the course or otherwise are dissatisfied with your own progress, please describe your problems here:

STUDENT EVALUATION OF SPECIAL EDUCATIONAL EXPERIENCES

(Professional Meetings, Short Courses, Etc.)

Name of Student: _____

Experience (please identify): _____

_____

1. In relation to your own objectives in participating in the internship program, would you judge this particular experience (choose one):

☐ Very valuable

☐ Valuable

☐ Of little value

☐ Of no value

2. If you found this experience to be of little or no value, would you please indicate in what way the experience failed to contribute to satisfying your own objectives:

EGYPTIAN STI TRAINING PROJECT

ON-SITE TRAINING EVALUATION FORM

DATE:_____

NAME OF TRAINEE:_____

NAME OF EVALUATOR:_____

TRAINING INSTITUTION:_____

1. How beneficial did you feel the training was in general?

   ___A. Very beneficial ___B. Beneficial ___C. Not very beneficial

2. Did you feel the trainee was adequately prepared for the training? What other preparation was needed?

3. Did you feel that the length of the training was:

   ___A. Too long ___B. Just right ___C. Too short

4. Did you find it necessary to modify the training as it progressed?

   ___A. yes, alot ___B. yes, slightly ___C. no, not very much

5. Did you feel that the trainee adequately understood the concepts and practices covered during the training? Why, or why not?

Thank you very much. Please feel free to add any comments on the reverse side.

APPENDIX E

Host Organizations for Training

HOST ORGANIZATIONS FOR TRAINING

Name	Contact Person
American Library Association 50 East Huron Street Chicago, IL 60611	Peggy Barber (312)944-6780
American Management Association 1800 K Street, N.W. Washington, D.C.	Fred Voss (202)223-5856
American Marketing Association 222 S. Riverside Plaza, Suite 606 Chicago, IL 60606	Ann Christensen, Assistant Director, Professional Chapter (312)648-0536
American Petroleum Institute 156 William Street New York, NY 10038	Irving Zarember, Assistant Manager (212)587-9665
American Society for Training and Development 1 Dupont Circle, N.W. Washington, D.C.	Mr. McCullough, Vice President for Professional Development (202)659-1085
Association of Research Libraries/Office of Management Studies (ARL/OMS) 1527 New Hampshire Avenue, NW Washington, D.C. 20036	Duane Webster, Director (202)232-8656
Battelle Columbus Laboratories 505 King Avenue Columbus, OH 43201	Gabe Kovacs (614)424-5044
Bibliographic Retrieval Services Corporation Park, Building 702 Scotia, NY 12302	Joe Paulsen, Director of On-line Retrieval Services (518)374-5011
Biosciences Information Service (BIOSIS) 2100 Arch Street Philadelphia, PA 19103	Ed Johnson, Public Relations (215)568-4016

Catholic University of America Computer Center Cassidy, 8th and Lawrence Streets, NE Washington, D.C. 20064	Karl C. Thomas, Director (202)635-5373
Catholic University of America Mullen Library Washington, D.C. 20064	Kathleen Purnell, Head of Cataloging (202)635-5066
Chemical Abstracts Service Box 3012 Columbus, OH 43210	Edward Donnell, Manager, Public Information (614)421-3624
CLENE, Inc. Catholic University of America O'Boyle Hall Washington, D.C. 20064	Eleanor Ficke, Director (202)635-5825
Council of Governments 1875 I Street, NW Washington, D.C. 20006	Barbara Robinson, Director (202)223-6800
Department of Housing and Urban Development Washington, D.C. 20591	Elisa Freeman, Director of Libraries (202)755-6376
Engineering Index 345 E. 47th Street New York, NY 10017	Geoffrey Worton, Marketing Manager (202)644-7600
FIND/SVP 500 5th Avenue New York, NY 10036	Anthony Zeidler, Business Development Manager (202)345-2400
Franklin Research Center 20th and Parkway Philadelphia, PA 19103	Bernard E. Epstein, Vice President (215)488-1392
Georgia Institute of Technology School of Information and Computer Science Atlanta, GA 30332	Dr. Vladimir Slamecka (404)894-3156

IIT Research Institute 10 West 35th Street Chicago, IL 60616	Pete Schipma, Manager, Information Sciences (312)567-4335
Informatics 6011 Executive Boulevard Rockville, MD 20852	Robert Windrow, Director of Marketing (800)638-6595
Information Retrieval 1911 Jefferson Davis Highway Suite 907 Arlington, VA 22202	Ron Acquavita (703)998-2980
Institute for Scientific Information 3501 Market Street Philadelphia, PA 19104	Ron Hamilton, Director of Field Marketing (215)386-0100
International Drug Information Center 81 DeKalb Avenue Brooklyn, NY 11201	Dr. Rosenburg, Director, Division of Drug Information (212)330-2735
Library of Congress Room 112, Jefferson Bldg. AL/NP Library of Congress Washington, D.C. 20540	Dorothy Pollet Gray, Educational Liaison Officer (202)287-5220
Micronet, Inc. 2551 Virginia Avenue, NW Washington, D.C. 20037	Robert Landau (202)333-4800
MINITEX University of Minnesota S24 Wilson Library 309 19th Avenue, South Minneapolis, MN 55455	Alice Wilcox (612)376-3926
National Agriculture Library Room 100 Beltsville, MD 20705	Carol Johnson (301)344-3823
National Bureau of Standards Library Division ADMIN EO-1 Washington, D.C. 20234	Patricia Berger, Chief, Library Division (202)921-3451

National Library of Medicine 8600 Rockville Pike Bethesda, MD 20205	Mary Corning, International Relations Office (301)496-6481
National Oceanographic and Atmospheric Administration (NOAA) U.S. Department of Commerce Rockville, MD 20852	Elizabeth Yeates, Chief, Library and Information Services Division (301)443-8287
National Technical Information Service 425 13th Street, NW, Suite 620 Washington, D.C. 20004	Frank Post, International Relations Office (202)724-3386
New England Research Application Center (NERAC) University of Connecticut Storrs, CT 06268	Daniel Wilde, Director (203)486-4533
OCLC, Inc. 6565 Frantz Road Dublin, OH 43017	Bill Irvin, Director of Personnel (614)764-6000
Palinet 3420 Walnut Street University of Pennsylvania Philadelphia, PA 10104	Jim Schoenueng, Executive Director (215)382-7031
Planning Research Corporation (PRC) 1500 Planning Research Drive McLean, VA 22102	Stan Smith, Program Development Director (703)556-1500
Publishing Institute University of Denver Graduate School of Librarianship and Information Management Denver, CO 80208	Elizabeth A. Geiser, Director (201)674-3537
Simmons College Graduate School of Library and Information Science 300 The Fenway Boston, MA 02115	Richard Palmer, Associate Professor (617)738-2225

Smithsonian Scientific Information Exchange (SSIE) 1730 M Street, NW Washington, D.C. 20036	Dr. Donald Elliot, Vice President, Division of Scientific Affairs (202)634-3933
Special Libraries Association 235 Park Avenue, South New York, NY 10003	Mary Frances Hoban, Director Professional Development (212)477-9250
University of Minnesota Library Systems Department Wilson Library Minneapolis, MN 55455	Audrey Grosch (612)376-8138
Washington Library Network Washington State Library, AJ-11 Olympia, WA 98504	Raymond DeBuse, Manager, Development and Library Services (206)753-5594

APPENDIX F

Individual Training Programs

PROGRAM 1: LIBRARY ADMINISTRATION

Ms. Soheir Madkour

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Managerial functions and techniques in libraries and information centers
- Analysis, evaluation, and design of information centers and services, including charting, sampling, cost/benefit analysis, and user requirement studies
- Application of data processing techniques to the automation of library and information center procedures
- Techniques employed by libraries in the organization of different materials, including descriptive and subject cataloging, classification, and indexing
- Current principles and specific procedures of selection acquisition, and bibliographic control of print and non-print materials

COURSES

- LSC 603 Introduction to Technical Services in Libraries (Catholic University)
- LSC 607 Management of Libraries (Catholic University)
- LSC 690 Introduction to Data Processing for Libraries (University of Maryland)
- LSC 714 O.C.L.C. Lab (Catholic University)
- LSC 727 On-Line Search Lab (Catholic University)

ON-SITE TRAINING

- Management Institute, University of Maryland
- National Bureau of Standards, Gaithersburg, Maryland
- Council of Governments, Washington, D.C.
- Housing and Urban Development Library, Washington, D.C.

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
	• Federal DP Office Automation Exhibits, Washington, D.C. • National Online Meeting, New York, New York • Special Libraries Association Meeting, Washington, D.C.

PROGRAM 2: ON-LINE SYSTEMS

Ms. Nagah Elewa

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Basic reference tools used in the fields of science and technology
- Methods for determining user information needs and for translating them into information services
- Techniques used in developing search strategies
- Mechanics of searching on-line data bases
- Techniques for evaluating the effectiveness of a search and for analyzing search results
- The range of on-line services and systems (e.g., Lockheed, SDC, BRS) that are available
- The design and operation of an information retrieval service
- Techniques for marketing a search service and for training end users

COURSES

- Information Sources and Services: Science and Technology (LSC 708, Catholic University)
- On-Line Search Lab (LSC 727, Catholic University)
- Introduction to Data Processing for Libraries (LSC 690, University of Maryland)
- Independent Study (LSC 900, Catholic University
- On-Line Data Bases (LSC 725, Catholic Univ.)

ON-SITE TRAINING

- Smithsonian Science Information Exchange (SSIE), Washington, D.C.)
- National Oceanographic and Atmospheric Administration (NOAA), Rockville, Maryland

PROGRAM 2: ON-LINE SYSTEMS Cont'd

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
• Library of Congress, Washington, D.C.	• Federal DP Office Automation Exhibits, Washington, D.C. • National Online Meeting, New York, New York • American Society for Information Science, (ASIS) Meeting, Pittsburgh, Pennsylvania • National Information Conference and Exhibition (NICE) IV Conference, Washington, D.C. • Special Libraries Association Meeting, Washington, D.C. • Bibliographic Retrieval Services, Membership Meeting, Washington, D.C.

PROGRAM 3: ABSTRACTING AND INDEXING

Mrs. Hoda El-Sharawy

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Understanding of the theory of indexing and abstracting
- Development of indexing languages and thesaurus construction
- Preparation of abstracts
- Application of theoretical principles to file organization and classification typologies
- Development of standardized cataloging and classification practices
- Use of automated information retrieval systems
- Creation of individual users profiles; SDI techniques

COURSES

- Information Sources and Services: Science and Technology (LSC 708, Catholic University)
- On-Line Search Lab (LSC 727, Catholic University)
- Introduction to Data Processing for Libraries (LSC 690, University of Maryland)
- Concepts of Abstracting and Indexing (55.653, American University)

ON-SITE TRAINING

- Franklin Research Center, Philadelphia, Pennsylvania
- American Petroleum Institute, Central Abstracting and Indexing Services, New York, New York

PROGRAM 3: ABSTRACTING AND INDEXING Cont'd

FIELD VISITS

- National Federation of Indexing and Abstracting Services, Philadelphia, Pennsylvania
- Philadelphia Enquirer, Philadelphia, Pennsylvania
- Drexel University Library School, Philadelphia, Pennsylvania

PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS

- Federal DP Office Automation Exhibit, Washington, D.C.
- National Online Meeting, New York, New York
- American Society for Information Science (ASIS) Meeting, Pittsburgh, Pennsylvania

PROGRAM 4: SCIENTIFIC PUBLISHING AND EDITING

Dr. Maurice Mikhail

TRAINING OBJECTIVES

To gain competencies in the following areas

- Skill in editing of various types of scientific manuscripts: monographs, encyclopedia and journal articles, conference proceedings
- Skill in editing of scientific manuscripts for the printer, including preparation of printer specifications
- Understanding of contemporary scientific publishing procedures, including photocomposition
- Ability to plan for publication design and illustrations
- Awareness of publishing business procedures: promotion and advertising, inventory control, accounting
- Awareness of alternative publishing forms: microfilm, and photo-duplication

COURSES

- Fundamentals of Proofreading and Editing (503, George Washington University)
- Association Publishing (512, George Washington University)
- Introduction to Data Processing for Libraries (LSC 690, University of Maryland)
- The Magazine Editor (511, George Washington University)

ON-SITE TRAINING

- Franklin Research Center, Philadelphia, Pennsylvania
- Publishing Institute, University of Denver Denver, Colorado

PROGRAM 4: SCIENTIFIC PUBLISHING AND EDITING Cont'd

FIELD VISITS

- BIOSIS, Philadelphia, Pennsylvania
- Philadelphia Enquirer , Philadelphia, Pennsylvania
- Drexel University Library School, Philadelphia, Pennsylvania
- Institute for Scientific Information, Philadephia, Pennsylvania
- American Federation of Abstracting and Indexing Services, Philadelphia, Pennsylvania
- Westview Publishing House, Boulder, Colorado
- Information Research Institute, Denver, Colorado
- U.S. Geological Survey, Washington, D.C.
- American Society for Microbiology, Washington, D.C.
- American Geological Institute, Washington, D.C.

PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS

- National Online Meeting, New York, New York
- American Society for Information Science (ASIS) Meeting, Pittsburgh, Pennsylvania
- Meeting of the Society for Scholarly Publishing, Minneapolis, Minnesota

PROGRAM 5: REPROGRAPHY

Mr. William Rizkalla

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Tools and techniques of reprographic systems
- Utilization of reprographic equipment
- Computer Output Microfilming technology
- Micrographic/computer standards, system specifications and requirements matching and inspection and quality control
- Computer-assisted retrieval

COURSES

- AU STI Workshop on Computers and Micrographics (55.654, American University)
- Audio-visual Publishing (509, George Washington University)
- Introduction to Data Processing for Libraries (LSC 690, University of Maryland)

ON-SITE TRAINING

- Micronet, Washington, D.C.
- National Technical Information Services (NTIS), Springfield, Maryland

PROGRAM 5: REPROGRAPHY Cont'd

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
	• National Micrographic Association Meeting, Washington, D.C. • Federal DP Office Automation Exhibit, Washington, D.C. • National Online Meeting, New York, New York

PROGRAM 6: UNION CATALOGING

Mr. Usama Mahmoud Aly

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Modern techniques employed by libraries in the organization of materials including descriptive and subject cataloging, classification, and indexing.
- Advanced applications of data processing techniques to the automation of the cataloging process including machine filing, database management, and computer output services.
- Current principles and procedures in bibliographic control of print and non-print materials.
- Development of standardized cataloging and classification practices.
- Principles and practices in networking.
- The technical fundamentals and the political realities upon which a union catalog structure must be based. This includes awareness of the requirements of participants and the economics of various union catalog systems.
- Administrative measures necessary to the successful development of a national union catalog systems.

COURSES

- Application of Computer Technology to Library Processes (LSC 732, Catholic University)
- O.C.L.C. Lab (LSC 714, Catholic University)
- The New Technology in Libraries (LSC 733 Catholic University)

ON-SITE TRAINING

- Library of Congress, Washington, D.C.
- Simmons College, Wellesley, Massachusetts
- OCLC, Inc., Dublin, Ohio
- University of Minnesota, Minneapolis, MN
- MINITEX, University of Minnesota, Minneapolis, Minnesota
- Georgia Institute of Technology, Atlanta, Georgia

FIELD VISITS

- University of California at Los Angeles (UCLA) Library, Los Angeles, California
- California State University at Long Beach Library, Long Beach, California
- University of Maryland Library, College Park, Maryland
- United Nations, New York, New York
- Catholic University Library, Washington, D.C.
- East Boston Cooperative System, Wellesley Free Library, Wellesley, Massachusetts
- Massachusetts Institute of Technology, Cambridge, Massachusetts
- Harvard University Library, Boston, Massachusetts
- Boston Public Library, Boston, Massachusetts
- Baltimore County Public Library, Towson, Maryland
- Carrollton Press, Arlington, Virginia

PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS

- American Society for Information Science (ASIS) Annual Meeting, Anaheim California
- Association of American Library Schools (AALS) 1981 Program Conference, Washington, D.C.
- American Library Association (ALA) Midwinter Conference, Washington, D.C.
- American Society for Information Science (ASIS) Workshop on the Administration and Activities of National Professional Organization, Washington, D.C.

PROGRAM 7: ACQUISITIONS

Mrs. Fekria Tadros

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Current principles and specific procedures of selection and acquisition of print and non-print materials.
- Familiarity with shared resources and shared cataloging systems.
- Fundamentals of data processing techniques and their application to libraries. Familiarity with appropriate computer terminals and communications equipment involved in this work.
- The means for determining user needs and how to translate such needs into acquisitions policies.
- Knowledge and use of acquisition tools, establishment of priorities and control of funds.

COURSES

- Introduction to Computers and Information Processing (LSC 605, Catholic University)
- Application of Computer Technology to Library Processes (LSC 732, Catholic University)
- O.C.L.C. Lab (LSC 714, Catholic University)
- Introduction to Technical Services in Libraries (LSC 603, Catholic University)

ON-SITE TRAINING

- Catholic University Library System, Washington, D.C.
- Library of Congress, Washington, D.C.
- Franklin Research Institute, Philadelphia, Pennsylvania
- National Bureau of Standards Library, Gaithersburg, Maryland

PROGRAM 7: ACQUISITIONS Cont'd

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
• Carrollton Press, Arlington, Virginia	• American Society for Information Science (ASIS) Annual Meeting, Anaheim, California • American Society for Information Science (ASIS) Workshop on the Administration and Activities of National Professional Organization

PROGRAM 8: DATA BASE DESIGN

Mrs. Effat El-Shooky

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Knowledge of major commercial data base systems available
- Knowledge of latest techniques for developing and implementing effective data base systems
- Techniques for determining user requirements and incorporating them into the systems' specifications
- Fundamentals of effective management of data base systems

COURSES

- Real Time Systems (55.530, American University)
- Data Base Systems (245, George Washington University)
- Computer Based Information Retrieval (LSC 722, Catholic University)
- Online Search Lab (LSC 727, Catholic University)

ON-SITE TRAINING

- National Agriculture Library, Gaithersburg, Maryland
- Smithsonian Scientific Information Exchange (SSIE), Washington, D.C.
- OCLC, Inc., Dublin, Ohio
- Battelle Columbus Laboratories, Columbus, Ohio
- IIT Research Institute, Chicago, Illinois
- Georgia Institute of Technology, Atlanta, Georgia

PROGRAM 8: DATA BASE DESIGN Cont!t

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
• National Rehabilitation Information Center, Washington, D.C. • Baltimore County Public Library, Towson, Maryland • National Library of Medicine, Bethesda, Maryland • National Technical Information Service, (NTIS), Springfield, Virginia • Carrollton Press, Arlington, Virginia	• American Society for Information Science (ASIS) Workshop on "Special Files", Anaheim, California • American Society for Information Science (ASIS) Annual Meeting, Anaheim, California • American Library Association (ALA) Midwinter Conference Exhibits, Washington, D.C. • American Society for Information Science (ASIS) Workshop, "On-line Weekend", Catholic University, Washington, D.C. • American Society for Information Science (ASIS) Workshop on the Administration and Activities of National Professional Organization

180

PROGRAM 9: RESOURCE SHARING

Mrs. Eman Abdel-Rahman

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Development of short- and long-term goals for information resource sharing
- Application of automated techniques for acquiring and cataloging book and non-book materials within a network environment
- Identification and assessment of factors affecting the development, structure, and governance of networks
- Development of standards, policies, and procedures for contributing and accessing information within the network
- Techniques for delivering documents and other information to network users on demand
- Analysis of alternative methods for sharing resources among organizations in different stages of technological development.

COURSES

- Online Search Lab (LSC 727, Catholic University)
- Computer Based Information Retrieval (LSC 722, Catholic University)
- Introduction to Library Systems Analysis (LSC 741, Catholic University)
- O.C.L.C. Lab (LSC 714, Catholic University)

ON-SITE TRAINING

- Library of Congress, Washington, D.C.
- PALINET, Philadelphia, Pennsylvania
- MINITEX, University of Minnesota, Minneapolis, Minnesota

PROGRAM 9: RESOURCE SHARING Cont'd

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
• Informatics, Rockville, Maryland	• Institute on Library Networking in the National and International Context, Catholic University, Washington, D.C. • Library of Congress CDS Alert Service, Washington, D.C. • Workshop on "Evaluation of Library Collections", Washington, D.C. • American Society for Information Science (ASIS) Annual Meeting, Washington, D.C.

PROGRAM 10: COMPUTER AND TELECOMMUNICATIONS TECHNOLOGY

Mr. Atef El-Sherbeni

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Organization and retrieval of bibliographic information
- State-of-the-art developments in data communications
- Techniques and procedures for the effective management of data processing facilities
- Analysis and evaluation of alternative hardware configurations and software systems for processing data within a network environment
- Application of minicomputers and microcomputers to the processing of bibliographic data

COURSES

- Computer Based Information Retrieval (LSC 722, Catholic University)
- Microprocessors and Microprocessors (203.20, George Washington University)
- Introduction to Microcomputers (150.21 George Washington University)

ON-SITE TRAINING

- INTEL MCS-48 Seminar, Chicago Illinois
- Library of Congress, Washington, D.C.
- Computer Communications Systems and Networks, George Washington University, Washington, D.C.
- Catholic University Computer Center, Washington, D.C.
- INTEL MCS-80/85 Seminar, Boston, Massachusetts
- Georgia Institute of Technology, Atlanta, GA

PROGRAM 10: COMPUTER AND TELECOMMUNICATIONS TECHNOLOGY Cont'd

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
• Informatics, Inc., Rockville, Maryland • GTE Telenet, Vienna, Virginia • National Library of Medicine, Bethesda, Maryland	• Federal Computer Conference, Washington, D.C. • Library Techniques for Support Personnel Seminar, Washington, D.C. • Special Libraries Association (SLA) Conference, Atlanta, Georgia • Workshop on "Evaluation of Library Collections", Washington, D.C. • American Society for Information Science (ASIS) Annual Meeting, Washington, D.C.

PROGRAM 11: INFORMATION SERVICE MARKETING

Aadel K. El-Duweini

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Identification of target markets and differential needs assessment
- Planning and development of information products and services that meet the needs of target markets
- Techniques for pricing and distributing information products and services
- Techniques for promoting information products and services
- Development of long- and short-term marketing plans and strategies for satisfying the needs of target markets within the limits of available resources.

COURSES

- Consumer Behavior (11.602.31, American University)
- Computer Based Information Retrieval (LSC 722, Catholic University)
- Basic Marketing Management (141.20 George Washington University)
- Introduction to Library Systems Analysis (LSC 741, Catholic University)

ON-SITE TRAINING

- New England Research Application Center (NERAC), Storrs, Connecticut
- Institute for Scientific Information (ISI), Philadelphia, Pennsylvania
- Planning Research Corporation (PRC), McLean, Virginia

PROGRAM 11: INFORMATION SERVICE MARKETING Cont'd

FIELD VISITS

- National Technical Information Service (NTIS), Springfield, Virginia
- Franklin Research Center, Philadelphia, Pennsylvania
- BIOSIS, Philadelphia, Pennsylvania
- Chemical Abstracts Service, Columbus, Ohio
- State Library of Ohio, Columbus, Ohio
- Battelle Columbus Laboratories, Columbus Ohio
- American Marketing Association, Chicago, Illinois
- International Drug Information Center, New York, New York
- FIND/SVP, New York, New York
- Engineering Index, New York, New York
- Library of Congress, Washington, D.C.
- Information Retrieval, Arlington, Virginia
- National Library of Medicine, Bethesda, Maryland

PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS

- Seminar on Public Relations for Library and Information Service, Catholic University, Washington, D.C.
- Special Libraries Association (SLA) Conference, Atlanta, Georgia
- ASIDIC Meeting, Alexandria, Virginia
- Workshop on "Evaluation of Library Collections" Washington, D.C.
- American Society for Information Science (ASIS) Annual Meeting, Washington, D.C.

PROGRAM 12: BUDGETING AND FISCAL MANAGEMENT

Mr. Wahid El-Demerdash

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Analysis, design, and implementation of cost-effective accounting systems
- Application of computer technology to fiscal planning and management information systems
- Strategies for marketing and pricing information services
- Overview of basic concepts and processes used in the acquisition, storage, and retrieval of scientific and technical information (both textual and numberic data)

COURSES

- Information Management (LSC 743, Catholic University)
- Marketing Library and Information Services (LSC 748, Catholic University)
- Library and Fiscal Management (LSC 758, Catholic University)

ON-SITE TRAINING

- National Technical Information Service (NTIS), Springfield, Virginia
- Institute for Scientific Information (ISI), Philadelphia, Pennsylvania

FIELD VISITS

- Library of Congress Cataloging Distribution Service, Washington, D.C.
- Library of Congress Financial Management Office, Washington, D.C.

PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS

- National On-Line Meeting, New York, New York
- "Management of Information Resources for Business and Industry", sponsored by the Special Libraries Association, Atlanta, Georgia
- "Pricing Information", sponsored by the Special Libraries Association, Atlanta, Georgia
- Special Libraries Association (SLA) Conference, Atlanta, Georgia
- "Library Techniques for Support Personnel", sponsored by A.J. Seminars, Inc., Washington, D.C.

PROGRAM 13: TRAINING SERVICES DESIGN

Mrs. Yosriya Zayed

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Identification of training needs
- Curriculum planning, design, and evaluation
- Instructional media design and development
- Workshop and seminar planning
- Skill-building concepts and techniques
- Trends in continuing education for library and information science

COURSES

- Development of Human Resources in the Library System (LSC 755, Catholic University)
- Marketing Library and Information Services (LSC 748, Catholic University)
- Audiovisual Materials and Services (LSC 772, Catholic University)
- O.C.L.C. Lab (LSC 714, Catholic University)

ON-SITE TRAINING

- Association of Research Libraries/Office of Management Studies, Washington, D.C.
- CLENE, Inc. (The Continuing Library Educa- Network and Exchange), Washington, D.C.
- Special Libraries Association (SLA), New York, New York

PROGRAM 13: TRAINING SERVICES DESIGN Cont'd

FIELD VISITS

- National Library of Medicine, Bethesda, Maryland
- Library of Congress Federal Library Committee, Washington, D.C.
- Association of Research Libraries Office of Management Studies (ARL/OMS), Washington, D.C.
- New York Times Information Bank, New York, New York
- Library of Congress Staff Development Office, Washington, D.C.
- American Management Association (AMA), Washington, D.C.

PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS

- "Librarians as Marketeers - A Critical Role for the 80's, Joint Spring Workshop sponsored by local chapters of the Special Libraries Association, the American Society for Information Science, and the D.C. Library Association, Washington, D.C.

PROGRAM 14: CATALOGING SYSTEMS

Ms. Shams M. Ali

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Application of the latest computer technology to cataloging processes
- Standards applied to the cataloging of print and non-print materials (e.g., AARC, ISBD)
- Standards applied to the computer storage and retrieval of bibliographic information (e.g., MARC formats)
- Management of automated catalogs and authority files
- Cataloging products and search services provided from automated files

COURSES

- Advanced Cataloging and Classification (LSC 713, Catholic University)
- Introduction to Technical Services in Libraries (LSC 603, Catholic University)
- O.C.L.C. Lab (LSC 714, Catholic University)
- Introduction to Computers and Information Processing (LSC 605, Catholic University)

ON-SITE TRAINING

- Washington Library Network (WLN), Olympia, Washington
- OCLC, Inc., Dublin, Ohio

PROGRAM 14: CATALOGING SYSTEMS Cont'd

FIELD VISITS	PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS
• National Library of Medicine, Bethesda, Maryland • Library of Congress Processing Services and Congressional Research Service, Washington, D.C. • Catholic University of America Library System, Cataloging Division, Washington, D.C. • National Bureau of Standards (NBS), Gaithersburg, Maryland • University of Maryland Library System, Baltimore, Maryland	• National Online Meeting, New York, New York • AACR 2 Institute, sponsored by the American Library Association, Seattle, Washington • "Automated Cataloging: Access to Systems on the Market", sponsored by the Special Libraries Association, Atlanta, Georgia • Special Libraries Association (SLA) Conference, Atlanta, Georgia

PROGRAM 15: DATA BASE DESIGN

Ms. Laila H. Kamel

TRAINING OBJECTIVES

To gain competencies in the following areas:

- Major commercial data base systems
- The latest techniques for designing and implementing cost-effective data base systems
- Methods for determining user requirements and incorporating them into system specifications
- Data base management within a network environment

COURSES

- Data Base Management Systems (55.635, American University)
- On-Line Data Bases (LSC 725, Catholic University)
- On-Line Search Lab (LSC 727, Catholic University)

ON-SITE TRAINING

- Battelle Columbus Laboratories, Computer and Information Systems, Vienna, Virginia
- Bibliographic Retrieval Service (BRS), Scotia, New York

PROGRAM 15: DATA BASE DESIGN Cont'd

FIELD VISITS

- National Library of Medicine, Bethesda, Maryland
- Library of Congress Automated Systems Office, Washington, D.C.
- Franklin Research Center, Philadelphia, Pennsylvania
- Information Exposition '81, sponsored by Information Handling Service, Rosslyn, Virginia
- National Oceanic and Atmospheric Administration (NOAA), Gaithersburg, Maryland
- National Rehabilitation Information Center (NARIC), Washington, D.C.

PROFESSIONAL MEETINGS, WORKSHOPS, AND SEMINARS

- National On-Line Meeting, New York, New York
- "Data Base Concepts, Structures, Access Methods", sponsored by Control Data Corporation Institute for Advanced Technology, Rosslyn, Virginia
- "Library Techniques for Support Personnel", sponsored by AJ Seminars, Inc., Washington, D.C.

APPENDIX G

List of Books for Preparation of Trainees in Egypt

LIST OF BOOKS FOR PREPARATION OF TRAINEES IN EGYPT

PROGRAM 6: Union Cataloging

Bloomberg, Mary and Evans, G. Edward. Introduction to Technical Services for Library Technicians. 3d ed. Littleton, Colo.: Libraries Unlimited, 1976.

Brown, Clara D. Serials: Acquisition and Maintenance. Birmingham: Ebasco Industries, Inc., 1972.

Brown, Clara D. and Smith, Lynn S. Serials: Past, Present and Future. 2d (rev.) ed. Birmingham: Ebsco Industries, Inc., 1980.

Martin, Susan. The Professional Librarian's Reader in Library Automation and Technology. White Plains, N.Y.: Knowledge Industry Publications, 1980.

Wynar, Bohdan S. Introduction to Cataloging and Classification. 6th ed. Littleton, Colo.: Libraries Unlimited, 1980.

PROGRAM 7: Acquisitions

Bohl, Marilyn. Information Processing. 3d ed. Chicago: Science Research Associates, 1980.

Boss, Richard W. The Library Manager's Guide to Automation. White Plains, N.Y.: Knowledge Industry Publications, 1979.

Foro, Stephen. The Acquisition of Library Materials. Rev. ed. Chicago: American Library Association, 1978.

Shelly, Gary B. Introduction to Computers and Data Processing. Fullerton: Anaheim Publ. Co., 1980.

PROGRAMS 8 AND 15: Database Design

Christian, Roger. The Electronic Library: Bibliographic Data Bases, 1978-79. White Plains, N.Y.: Knowledge Industry Publications, 1978.

Lancaster, F. Wilfrid. Information Retrieval Systems: Characteristics, Testing and Evaluation. 2d ed. New York: Wiley, 1979.

Martin, James. Computer Data Base Organization. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1977.

Salton, Gerard. Dynamic Information and Library Processing. Englewood Cliffs, N.J.: Prentice-Hall, 1975.

PROGRAM 9: Resource Sharing

Kent, Allen and Galvin, Thomas J. The On-Line Revolution in Libraries. New York: Marcel-Dekker, 1978.

Kent, Allen and Galvin, Thomas J., eds. The Structure and Governance of Library Networks. New York: Marcel-Dekker, 1979.

Markuson, Barbara Evans and Wools, Blanche, eds. Networks for Networkers. New York: Neal-Schuman, 1980.

PROGRAM 10: Computer Communications Technology

Martin, James. Telecommunications and the Computer. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, 1976.

Sanders, Donald and Birkin, S.J. Computers and Management in a Changing Society. New York: McGraw-Hill, 1980.

PROGRAM 11: Information Service Marketing

King, William R. and Zaltman, Gerald, eds. Marketing Scientific and Technical Information. Boulder, Colo.: Westview Press, 1979.

Kotler, Philip. Principles of Marketing. Englewood Cliffs, N.J.: Prentice-Hall, 1980.

PROGRAM 12: Budgeting and Fiscal Management

Bohl, Marilyn. Information Processing. 3d ed. Chicago: Science Research Associates, 1980.

Shelly, Gary B. Introduction to Computers and Data Processing. Fullerton: Anaheim Publ. Co., 1980.

PROGRAM 13: Training Services Design

Davis, Robert H., Alexander, Lawrence T., and Yelon, Stephen L. Learning System Design - An Approach to the Improvement of Instruction. New York: McGraw-Hill, 1974.

Kemp, Jerrald. Instruction Design: A Plan for Unit and Course Development. 2d ed. Belmont, CA: Fearon-Pitman Publishers, Inc., 1977.

Tyler, Ralph W. Basic Principles of Curriculum and Instruction. Chicago: University of Chicago Press, 1949.

PROGRAM 14: Cataloging Systems

Blomberg, Marty and Evans, G. Edward. Introduction to Technical Services for Library Technicians. 3d ed. Littleton, Colo.: Libraries Unlimited, 1976.

Boss, Richard W. The Library Manager's Guide to Automation. White Plains, N.Y.: Knowledge Industry Publications, 1979.

Brown, Clara D. Serials: Acquisition and Maintenance. Birmingham: Ebsco Industries, 1972.

Brown, Clara D. and Smith, Lynn S. Serials: Past, Present and Future. 2d (rev.) ed. Birmingham: Ebsco Industries, 1980.

Martin, Susan. The Professional Librarian's Reader in Library Automation and Technology. White Plains, N.Y.: Knowledge Industry Publications, 1980.

Wynar, Bodhan S. Introduction to Cataloging and Classification. 6th ed. Littleton, Colo.: Libraries Unlimited, 1980.

APPENDIX H

Curriculum Vitae for Trainees

EMAN ABDEL-RAHMAN

DATE OF BIRTH: January 1, 1956

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Female

MAILING ADDRESS: 35 Nikhil, Cairo, Egypt

EDUCATION:

B.A. in Library and Information Science, Cairo University, June 1977

POSITION: Programmer, Scientific Computation Center, Cairo University

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Implementation of computerized inventory control projects for selected medical companies in Cairo
- Collaboration in the preparation of an Egyptian union catalog for periodicals
- Design and programming of data bases for the Egyptian Academy of Scientific Research and Technology

SHAMS MOHAMED ALI

DATE OF BIRTH: November 11, 1957

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Female

MAILING ADDRESS: 34 El-Wabour Street, Sayeda Zinab, Cairo, Egypt

EDUCATION:

B.A. in Library Science, Cairo University, July, 1979

POSITION:
- Researcher, Bibliographic Laboratory, Cairo University
- Instructor, Department of Library and Information Science, Cairo University

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Teaching: Introduction to Library Science and participation in student training, 1979
- Technical Services:
  - Participating in the indexing of such English periodicals as: Library of Congress Information Bulletin, The Library Quarterly, Library Re-Sources and Technical Services, OCLC Newsletter
  - Participating in indexing Arabic periodicals of Social Science
  - Cataloging and classifying book collections in the Bibliographic Laboratory

CURRICULUM VITAE

SHAMS MOHAMAD ALI

- Research: Name authority file of Arab Names: establishment, updating, distribution, modern technologies

USAMA EL-SAID MAHMOUD ALY

DATE OF BIRTH: February 11, 1950

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Male

MAILING ADDRESS: 47 Kider El-Tony Street, Nasser City, Cairo, Egypt, Flat 202

EDUCATION:

- M.A. in Library Science, Use of Computers in Preparation of Library Catalogs, Cairo University, September 1979
- Certificate in Computer Science, Cairo University and International Computers Limited, Cairo Center, December, 1975
- B.A. in Library Science, Cairo University, 1972

POSITION: Assistant Professor of Library Science, Cairo University

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Instructor in Library Science at Cairo University, 1972-1979
- Consultant in Librarianship, Arab League Educational, Culture and Scientific Organization (Arabic UNESCO): Head of working group for Islamic Index (1974-75); Editor of bibliography of translated books (1976); Coordinator of library and information courses (1977); Head of working group on microfilm project (1978)
- Indexer of industrial development documents (Arabic Unido) (1976-1977)

WAHID MOHAMMAD AHMED EL-DEMERDASH

DATE OF BIRTH: January 12, 1946

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Male

MAILING ADDRESS: 15, Al-Berka Al-Neseria Street,
Lazoughly, Cairo, Egypt

EDUCATION:

- National Institute of Planning, November, 1975 - October, 1976
- School of Engineering, and Computer Center, American University, Cairo, December, 1975 - June, 1976
- American University, Cairo, March, 1973 - February, 1975
- Ain-Shams University, Cairo, October, 1965 - May, 1967

POSITION: Manager of Planning and Financing Affairs

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Operational Researcher at ASRT (January, 1973 - September, 1978)
- Job Analyst, ASRT (June, 1968 - January, 1973)
- Systems Analyst, B.O.B. Foundation for Contracting Joddah, Saudia Arabia (October, 1979 - May, 1980)

TRAINING COURSES:

- Society of Operations Research, ORSE in Egypt

AADEL KHALAF EL-DUWEINI

DATE OF BIRTH: December 26, 1945

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Male

MAILING ADDRESS: 19 Sharia El-Emprator Bahlawi, Dokki, Cairo, Egypt

EDUCATION:

- Degree: Masters Degree in Pharmaceutical Sciences (Pharmacology), School of Pharmacy, Cairo University, 1976
- Degree: Bachelor's Degree in Pharmacy and Pharmaceutical Chemistry, School of Pharmacy, Cairo University

POSITION: Information and Documentation Specialist, National Information and Documentation Center, Cairo, Egypt

LANGUAGES:

Mother Tongue: Arabic

Other: English, German, French

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Preparation of bibliographies in pharmaceutical, chemical and medical fields
- Abstracting scientific articles in the mentioned fields
- Translating scientific articles
- Current awareness service in the field of Pharmacology and Pharmaceutical Technology (UNESCO Project in Arab States)
- Assistance in establishment of Science Library

CURRICULUM VITAE

AADEL KHALAF EL-DUWEINI

- Lecturer in course for information specialists sponsored by ALESCO
- Consultant and member of "Publishing and Library Committee" at the National Cencer Institute, Cairo University
- Secretary of the Steering Committee for Scientific and Technical Information Services in Egypt
- Liaison Officer at ASRT/US AID Project for development of STI system in Egypt

NAGAH HABIB SAYED AHMED ELEWA

DATE OF BIRTH: June 28, 1946

COUNTRY AND PLACE OF BIRTH: Ismailia, Egypt

SEX: Female

MAILING ADDRESS: Takseem Aghakhan, 4 Bahgat Sharara St., Apt. 12, Shoubra, Cairo, Egypt

EDUCATION:

B.S. in Chemistry and Zoology, Cairo University, Faculty of Science, June 1967

POSITION: Assistant Editorial Secretary of Egyptian Journal of Microbiology, Science Publishing Department, NIDOC

LANGUAGES:

Mother Tongue: Arabic

Other: English, German

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Indexing and classification, science publishing
- Training for 3 months in Information Storage and Retrieval, National Computer Centre, Cairo University
- Postgraduate studies, Institute of Information and Documentation Science and Patent Information and Law, German Democratic Republic (1974 - 1976)
- Thesis entitled "Quantitative and Qualitative Analysis of Subject Headings Thesaurus in the Field of Informatik", under the supervision of H. J. Manecke, INER, THI, German Democratic Republic, 1976
- Research work toward M.S., under the topic "Biological Properties of Tissue Extracts". National Research Center, Cairo

HODA ABD EL-AZIZ ALI EL-SHARAWY

DATE OF BIRTH: July 22, 1941

COUNTRY AND PLACE OF BIRTH: Kalioubia, Egypt

SEX: Female

MAILING ADDRESS: 5 Amman St., Dokki, Cairo, Egypt

EDUCATION:

B.S. in Geology - Physics, Cairo University, Faculty of Science, May, 1963

POSITION: Scientific Documentalist, Bibliography Department, NIDOC

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Abstracting and classification of scientific articles in the fields of Geology and Physics
- Preparation of specific bibliographies on request
- Preparation for microfiche service in selected fields
- Participation in different seminars and courses in information sciences

ATEF ZAKARIA EL-SHERBENI

DATE OF BIRTH: January 8, 1954

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Male

MAILING ADDRESS: 23 July Project, No. 86, Helwan,
Cairo, Egypt

EDUCATION:

- B.S. in Applied Physics, Cairo University, Faculty of Science, 1979
- B.S. in Electronics and Communications, Cairo University, Faculty of Engineering, 1976

TRAINING COURSES:

- 1980 System Analysis and Design
  Scientific and Statistical Computation
  Research Center, Cairo University
- 1977 Fortran and Numerical Analysis, Level I
  Fortran and Numerical Analysis, Level II
  Fortran and Numerical Analysis, Level III
  Scientific and Statistical Computation
  Research Center, Cairo University
- 1973 Introduction to Programming
  American University, Cairo

POSITION:
- Lecturer in the Department of Applied Physics and Mathematics, Faculty of Engineering, Cairo University
- Hardware and Software Engineer with Data Care Ltd.
- Programming expertise in Fortran and Basic: exposed to various types of hardware such as ICL, CROMEMCO, APPLE, etc.

CURRICULUM VITAE

ATEF ZAKARIA EL-SHERBENI

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Maintenance and Installation Engineer of Private Automatic Branch Exchanges, Keytelephones and Intercoms with the UNITED GROUP CO., 1977 - 1980

EFFAT MOHAMED EL SHOOKY

DATE OF BIRTH: May 6, 1947

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Female

MAILING ADDRESS: 21 Gezirat El Arab Street, Cairo, Egypt

EDUCATION:

B.A. English Literature, Cairo University, June, 1969

POSITION: Reference Librarian and Information Officer, Industrial Development Centre for Arab States (IDCAS), Cairo, Egypt

RESPONSIBILITIES: Library reference work; Inquiry Service (member of team); Arab countries/sectorial statistical files project (Coordinator); Current Awareness (member of team); IDCAS Documentation and Information Training Courses (lecturer)

LANGUAGES:

Mother Tongue: Arabic

Other: English, French

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- IBM Corporation, Cairo, Egypt, occupied several positions: Liberature and European Program Library Coordinator; Project Administration, Coordinator of the special project, "Ministry of Foreign Affairs" (MOFA); Sales administration (March, 1970 - March, 1976)
- Member of IDCAS team who prepared a proposal for the creation of a documentation and information center at the General Establishment of Chemical Industries (GECI), Syria

CURRICULUM VITAE

EFFAT MOHAMED EL SHOOKY

- Member of IDCAS team who prepared the framework for the plan of establishing a statistical data bank for the National Centre for Industrial Researches, Tunisia
- Participated in IDCAS study for the establishment of documentation and industrial information centre at the Arab League, Cairo
- Participated in IDCAS diagnostic study for determining its needs for implementing an automated system

COURSES ATTENDED:

- IBM System 360 Orientation, AMAC, Cairo, 1975
- ASSEMBLER Language, AMAC, Cairo, 1975
- ASSEMBLER Workshop, AMAC, Cairo, 1976
- Data Processing Fundamentals, IBM, Tehran, 1976
- Data Management, IBM, Tehran, 1976
- Conventional and Non-conventional Methods for Information Storage and Retrieval Systems, DSP, Cairo, 1977

LAILA MOHAMED HOSIEN KAMEL

DATE OF BIRTH: May 1, 1950

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Female

MAILING ADDRESS: 5 Dokky Street, Flat 6, Giza, Cairo, Egypt

EDUCATION:

- Certificate in Computer Science, Institute of Statistical Studies and Researches, May, 1976
- B.S. in Statistics, Cairo University, June, 1973

POSITION: Programmer, Cairo University Computation and Research Center

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Has undertaken the development of a number of projects for the Academy of Science and the Sudanese Academy of Research
- Has done many statistical and numerical projects
- At present, is organizing the data of the "Student Affairs Project" for Cairo University
- Post-graduate training in: Computer languages (Fortran, Cobol, and Plan); Operating System (George 3 (ICL System)); Data analysis and management (Sizing, IDMS, DDL); and System analysis

SOHEIR ALY KHALIL MADKOUR

DATE OF BIRTH: June 15, 1947

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Female

MAILING ADDRESS: 9 Afrah El Angal St., El Kasser El-Einy, Cairo, Egypt

EDUCATION:

B.A. in Russian Language, Ain Shams University, Faculty of Foreign Languages, November, 1978

POSITION: Exchange and Gifts Librarian, National Information and Documentation Center, Cairo, Egypt

LANGUAGES:

Mother Tongue: Arabic

Other: English, Russian, Hungarian

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Classification of scientific periodicals
- Correspondence with different scientific institutes for exchanging of publications
- Training course in Hungarian language for information specialists (Budapest, 1970/71)
- Course in English language, American University, Cairo (Cairo, 1974)
- Training course in Russian language (USSR, 1976/77)
- Course in Information Science, IDCAS (Cairo, 1978)
- Course in Librarianship, British Council (Cairo, 1979)

MAURICE ABULSAAD MIKHAIL

DATE OF BIRTH: August 22, 1941

COUNTRY AND PLACE OF BIRTH: Assiut, Egypt

SEX: Male

MAILING ADDRESS: 35A Sekket El Daher Street, El Daher, Cairo, Egypt

EDUCATION:

- Ph.D. in Geology presented at Cairo University, 1979, Cairo University
- M.S. in Geology, Cairo University, 1972
- B.S. in Geology and Chemistry, Assiut University, 1963

POSITION: Head, Science Publishing Department, NIDOC

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Two semesters in Journalistic Technology and Methodology, American University, Cairo, 1968
- 16 years in publishing scientific periodicals and proceeding of conferences
- Assistant Editor of: Egyptian J. Chem.; Egyptian J. Phys.; Desert Inst. Bull.
- Abstracting scientific articles in the field of Geology
- Preparation of Cumulative Indices

WILLIAM MAKRAM RIZKALLA

DATE OF BIRTH: December 7, 1933

COUNTRY AND PLACE OF BIRTH: Sharkia, Egypt

SEX: Male

MAILING ADDRESS: 42 Dr. Shahine St., Agouza, Cairo, Egypt

EDUCATION:

Secondary School Certificate, Amir Farouk Secondary School, Cairo, Egypt, 1952

POSITION: Head of Photography Unit, NIDOC, since 1974

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Microforms, laboratory, macro- and microscopic photography operation and maintenance of Copyflo machines and Copiers
- Training course in maintenance and repair of Copyflo machines and Copiers (London, U.K., 1971)

FEKRIA YOUSSEF TADROS

DATE OF BIRTH: March 4, 1940

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Female

MAILING ADDRESS: 12 El Kemarati Street, Shoubra, Cairo, Egypt

EDUCATION:

B.S. Chemistry, Zoology, Faculty of Science, University of Cairo, May, 1963

POSITION: Scientific Librarian at the "Science Library", NIDOC

RESPONSIBILITIES: Classification and cataloging for scientific books and periodicals in the fields of chemistry, biochemistry, zoology; revision of publishers' invoices; indexing and library services; acquisition

LANGUAGES:

Mother Tongue: Arabic

Other: English, French

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Scientific Documentalist in the Bibliography Department, NIDOC; prepared bibliographies in the fields of chemistry, zoology, biochemistry; prepared abstracts in the same fields; assisted in preparing Science Arab Abstracts in NIDOC (January, 1964 - 1975)

TRAINING COURSES:

- Intensive English course, American University, Cairo, Egypt (1978-80)
- Visit to information section of CNRS, Paris, France (October, 1979)

YOSRIYA MOHAMED ZAYED

DATE OF BIRTH: October 30, 1951

COUNTRY AND PLACE OF BIRTH: Cairo, Egypt

SEX: Female

MAILING ADDRESS: 30 Al Itthad Street, Maadi, Cairo, Egypt

EDUCATION:

- Registered for M.A. in Library Science, Bibliographic Control of Egyptian Periodicals Contents, Cairo University, Department of Library and Information Science
- B.A. in Library Science, Cairo University, 1974
- University Teacher Certificate, Cairo University, May, 1976

POSITION: Researcher, Bibliographic Laboratory, Cairo University Instructor, Department of Library and Information Science, Cairo University

LANGUAGES:

Mother Tongue: Arabic

Other: English

OTHER EXPERIENCE AND/OR RELEVANT INFORMATION:

- Teaching: Practical descriptive cataloging, 1975 - 1978

  Practical subject cataloging, 1977 - 1978
- Technical Services: Sharing in preparing an index to Islamic literature in Arab periodicals

  Sharing in preparing an index to education literature in Arab periodicals

CURRICULUM VITAE

YOSRIYA MOHAMED ZAYED

Sharing in compiling a bibliography of Egyptian Dissertations

Sharing in design of a manual IRS for Library and Information Science in the Bibliographic Laboratory. Arabic descriptors were used in indexing and abstracting foreign literature

- Research: Registered for M.A. degree in 1976. The subject of the thesis is "Bibliographic control of Egyptian periodical contents". It aims at surveying and analyzing the indexing and abstracting services in Egypt and planning an improved national bibliographic control system of periodical contents